Commonwealth of Virginia Healthcare Sector: 2012 Broadband and Health IT Analysis

December 31, 2012

Prepared for:

Karen Jackson
Deputy Secretary of Technology
Commonwealth of Virginia

CIT BROADBAND

BROAD AXE TECHNOLOGY PARTNERS

Table of Contents

Project Goals

- Identify changes in broadband connectivity across health care provider segments
- Identify progress in adoption of key Health IT capabilities across the Commonwealth
  - Electronic Health Records (EHR)
  - Health Information Exchange (HIE)
  - Telehealth Services
- Generate new data used to populate the Commonwealth's Broadband Map for healthcare facilities and providers
- Provide synopsis of Health IT capabilities among Virginia's major hospital systems

Target Healthcare Provider Universe

- Hospitals
  - Acute Care, including SHIP/Critical Access
  - Specialty/Other
- Physician Practices
- Clinics and Community Health Centers
  - Rural Health Clinics
  - Federally Qualified Health Centers
  - Free Clinics
- Other key provider segments
  - Behavioral Health/Developmental Disability
  - Home Health Agencies
  - Nursing Homes
  - Assisted Living Facilities

Public/Private Endorsement and Promotion

Public

Virginia.gov

Office of Telework Promotion and Broadband Assistance

VDH Virginia Department of Health
Protecting You and Your Environment

Virginia's Medicaid Program
DMAS
Innovation · Quality · Value

Virginia Department of Social Services

Private

MSV Medical Society of Virginia

HIMSS Virginia Chapter

Virginia Hospital & Healthcare Association
An alliance of hospitals and health delivery systems

Medical Group Management Association
MGMA Virginia

Virginia Rural Health Association

Virginia Association of Free Clinics

Virginia Community Healthcare Association

Virginia Association Of Community Services Boards, Inc.

VHCA | vcal

VHQC

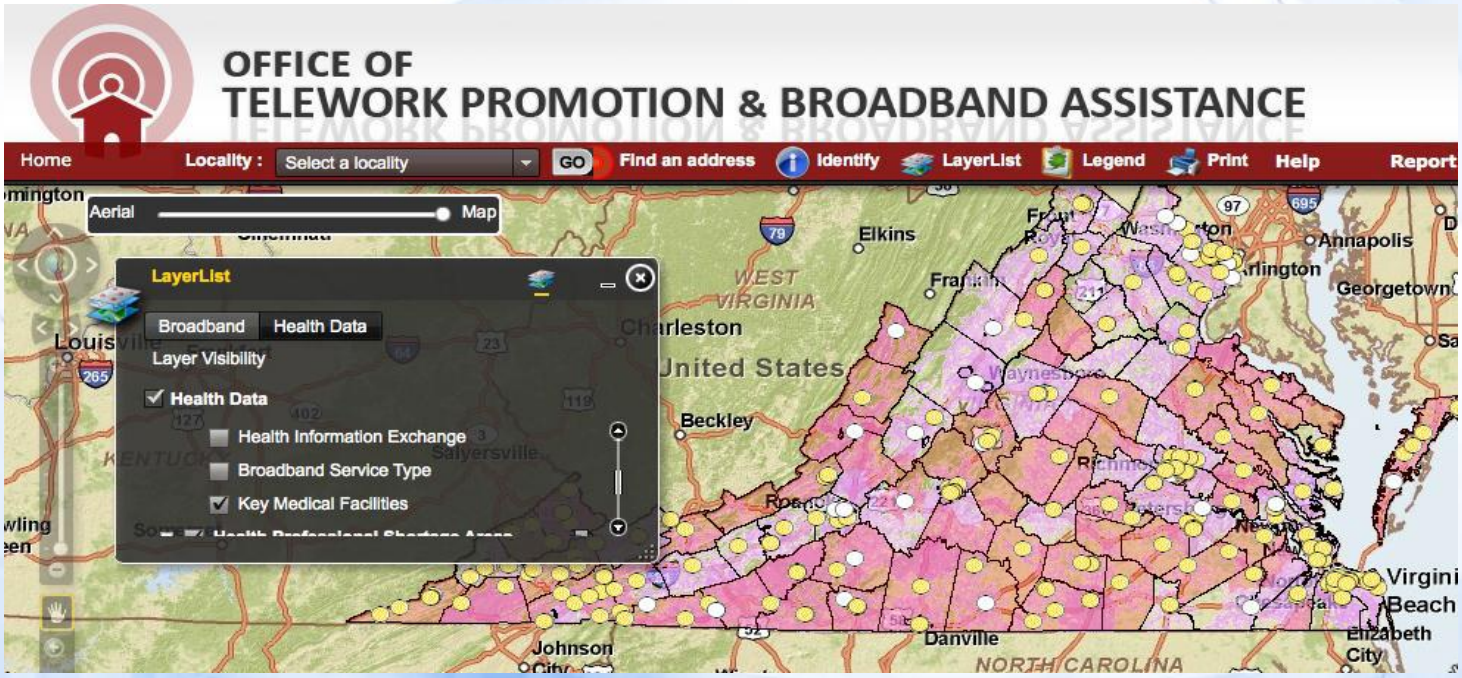
Virginia Association for Home Care and Hospice
Advocacy. Education. Guidance.

VPhA Virginia Pharmacists Association

CIT Broadband
Center for Innovative Technology

Survey Data: Key Uses

- Annual survey data populates the Health Data layer of the Commonwealth's Broadband Map
- Data shows key healthcare facilities and health professional shortage areas (HPSAs) relative to broadband availability
- Data also indicates HIT usage relative to broadband availability

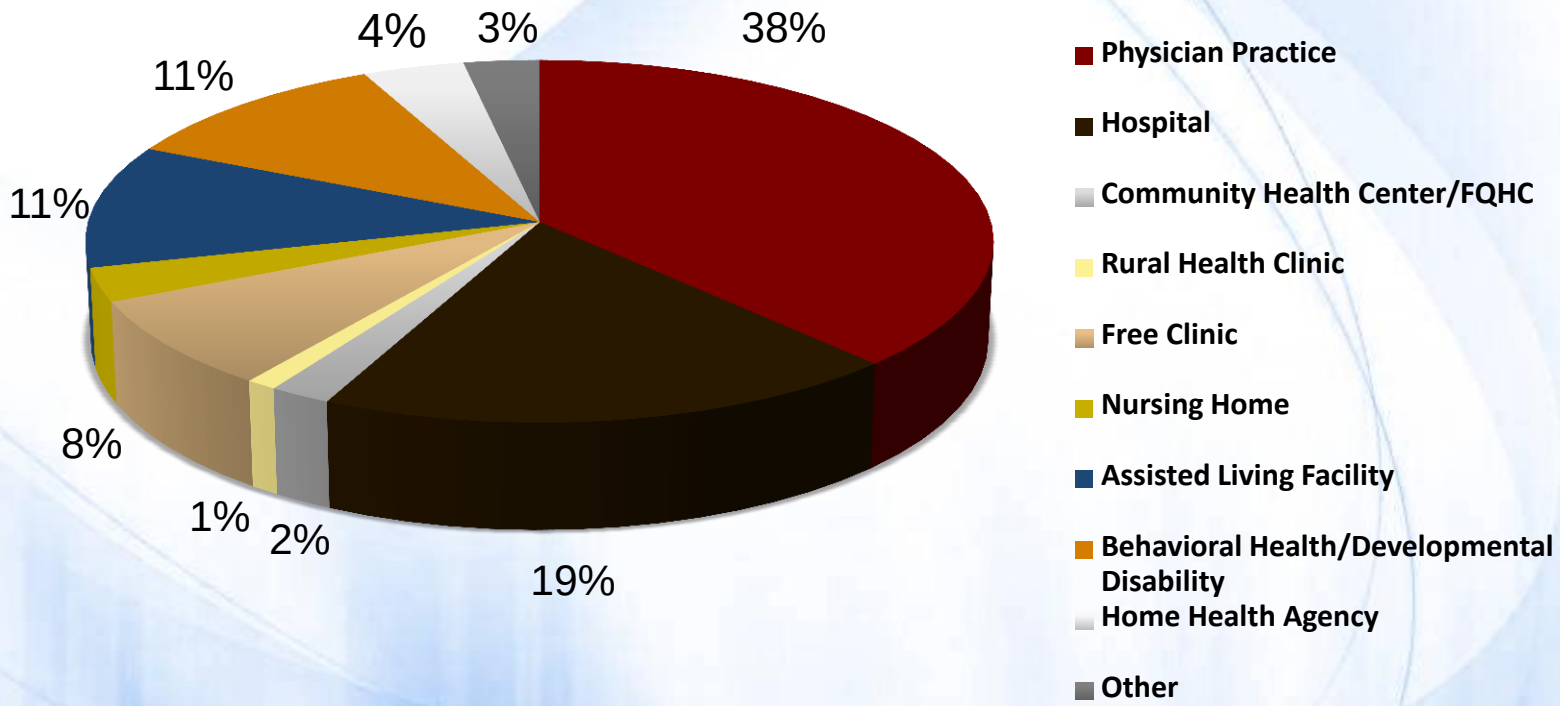


2012 Survey Improvements

- Widened survey participation with additional segments and additional industry group endorsements
  - Virginia Medical Practice Management Association (VMGMA)
  - Virginia Hospital and Healthcare Association (VHHA)
  - Virginia Department of Social Services (Assisted Living Facilities)
- Augmented report with year-over-year tracking of HIT progress among key provider segments
- Augmented/updated HIT benchmarks for Virginia vs. U.S.
- Modified several survey questions and content to improve clarity, per Commonwealth and association partner input
- Increased collaboration and survey promotion among healthcare associations
  - Strong 'integration' of survey with existing Commonwealth healthcare associations' communications
- Captured selected direct respondent comments for added insight

Survey Demographics: All Providers

- Provider participation was significant in hospital and physician populations, with additional support from community health centers, clinics, behavioral and home health providers, and nursing and assisted living facilities



N=406

Hospital Participation

- All major hospital systems have been represented over the 3 years since the survey's inception
  - Many with multiple locations responding
  - Nearly all acute care hospitals have been represented over time
  - 50% of SHIP/critical access hospitals have been represented this year
  - Nearly 30% of hospital respondents located in Rural/Mixed rural counties

Survey Participant

2010-11

2012

	System Participation	Multiple Locations 2012
Bon Secours	✓	✓
Carilion	✓	✓
Centra	✓	✓
HCA	✓	
Inova	✓	
LifePoint	✓	
Riverside	✓	✓
Sentara	✓	✓
Valley	✓	✓
Wellmont	✓	
UVA	✓	✓
VCU/MCV	✓	✓
Mountain States	✓	

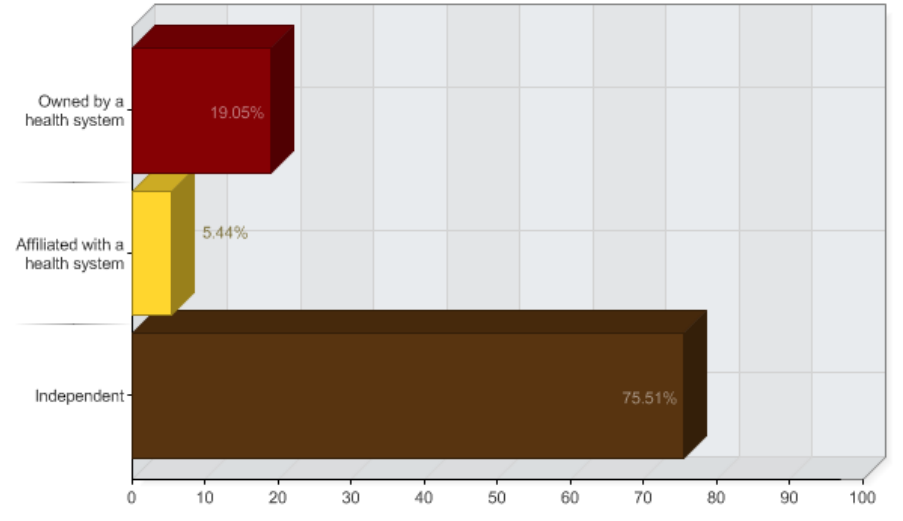
CIT BROADBAND

BROAD AXE TECHNOLOGY PARTNERS

Physician Participation

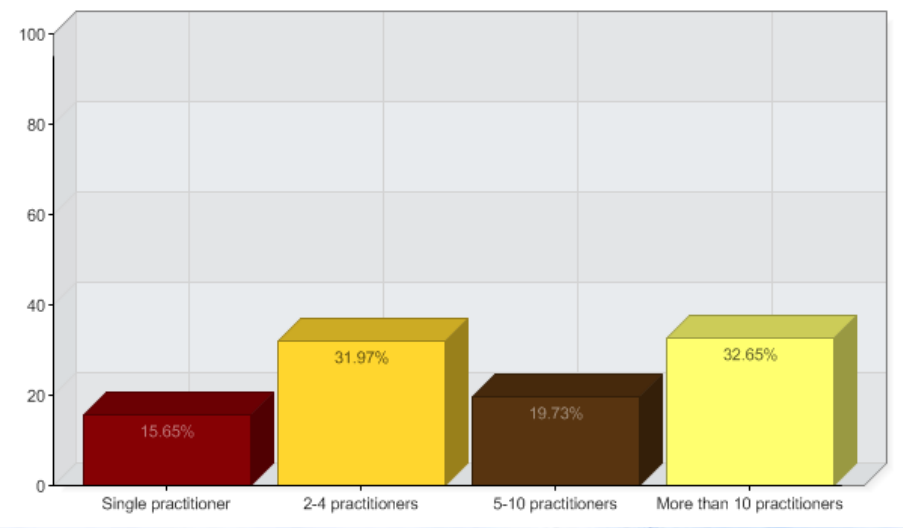
- As in previous survey years, the vast majority of physicians participating in the survey are independent, with the remaining 1/3 owned by, or affiliated with, a major health system
- The distribution across small and large practices is similar to previous years

Q. 15 How would you characterize the practice's affiliation?



n=147

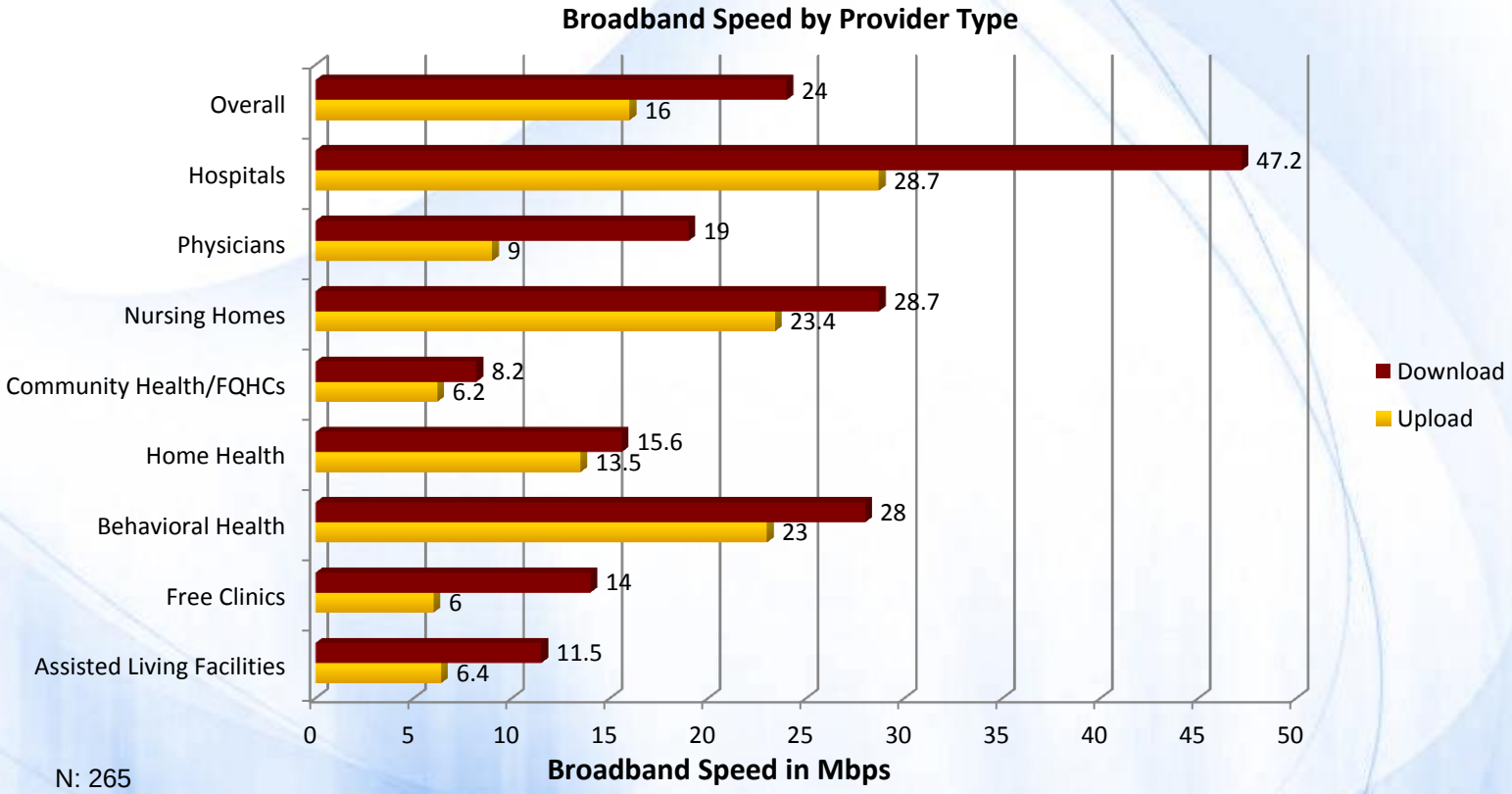
Q. 16 How would you characterize the size of the location/practice?



n=147

2012 Reported Broadband Speeds

- Overall, broadband speeds continue to trend faster across all provider segments, particularly with hospitals, which have shown more than a 35% increase over last year's reported average download speed of 34mbps



N: 265

Broadband Service: High-speed Internet access (e.g. DSL, Cable, Fiber, etc..) providing two-way data transmission with advertised speeds of at least 768 kbps downstream and 200 kbps upstream to end users. (definition per National Telecommunications Information Administration)

Summary Insights and Implications

Broadband: Speeds

- Virginia continues to outperform other states and national benchmarks in statewide broadband connectivity speeds, ranking 8th among states in average download speeds
- Average speeds within the Commonwealth of Virginia (all sectors) have doubled since our first survey was conducted in 2010 (2012 Akamai Annual Study)
- Most healthcare provider segments surveyed, including those with fewer requirements for high-speed connectivity and HIT functionality, indicate improvements in connection speed
- While the vast majority of providers have strong broadband capabilities, there has been a 10% shift in providers moving from slower speed DSL connectivity to higher speed cable and fiber systems

"We are in process of changing from a T1 line to 10meg broadband with a download of 10meg and upload of 10meg. Should be complete by end of October 2012."

– Survey comment from western Virginia Federally Qualified Health Center

Summary Insights and Implications

Broadband: Significance in HIT

- Survey respondents continue to view broadband as critical for their HIT initiatives, and most provider segments have substantial broadband capacity, with the majority of deployments being fiber or cable
- Broadband, though relevant for all HIT capabilities, is perceived as most important for EHR implementations

"We have plans to spend another $12-14K this year to make our systems what I refer to as "Warp Speed." You will not succeed in the world of computerization and EHR's without speeds that are extremely fast. What used to take 5 minutes to transmit a CT to UVA a year ago, now takes under 1.5 minutes. Faster connectivity means faster results and better patient care."

- Survey comment from southwest Virginia acute care hospital CEO

Summary Insights and Implications

EHR and Meaningful Use

- EHR adoption continues to increase among key provider segments
  - Hospitals in the Commonwealth of Virginia are maintaining their already high EHR adoption level at well over 90%
  - EHR adoption among physician practices grew by approximately 10% in the last year, according to the latest CDC data available; however, our benchmarking analysis shows that improvement in physician EHR adoption nationally has been even stronger, at just over 30% over the same period
  - Analysis of smaller clinics (RHCs, free clinics, CHCs) indicates that 50% currently utilize EHR systems and an additional 32% are prepared to implement an EHR system within the next three years
- Anticipated readiness to meet Meaningful Use requirements remains high among hospitals (84%) and physicians (72%)
  - However, uncertainty levels have increased somewhat among provider segments as new criteria were communicated just ahead of the survey period (see appendix for details)

Summary Insights and Implications

HIE and Telehealth

- HIE participation by hospitals has remained relatively consistent at about 35-40%
  - Physician participation in Health Information Exchange appears somewhat inconsistent from year-to-year, suggesting these providers are in early, experimental stages
- The use of telehealth services among major provider segments has remained consistent over the last several years with hospitals continuing to show greater utilization than physicians
- While telehealth is still in early stages of adoption, between 45-50% of all providers surveyed expect to be using Telehealth services within 3 years
  - For example, a number of Behavioral Health organizations are current users of telehealth services (33%), with nearly as many (29%) intending to implement telehealth within the next three years
  - The important physician segment still shows substantial uncertainty around telehealth, with just over 17% indicating current use, and nearly 30% expressing uncertainty about their plans

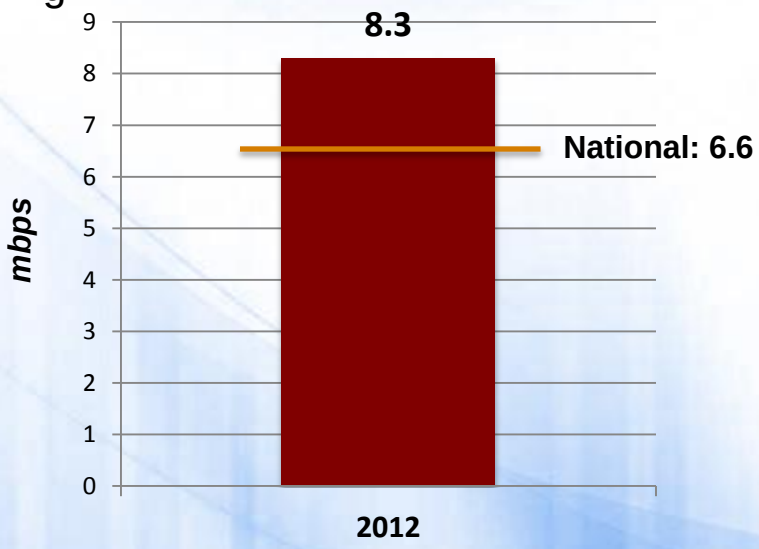
Key Broadband/HIT Metrics: Virginia vs. U.S.

Broadband Benchmarks: Virginia vs. U.S.

- Virginia ranks 8th against other U.S. states in statewide median download speeds
  - This median speed represents a 22% increase over 2011
  - Note that a number of states ahead of Virginia are more urban and geographically smaller

Virginia National Ranking:

Rank #8



	State	Q2 '12 Avg. Mbps	QoQ Change	YoY Change
1	Delaware	12.1	18%	49%
2	New Hampshire	10.1	8.2%	54%
3	District Of Columbia	9.7	9.3%	31%
4	Vermont	9.7	6.9%	38%
5	Rhode Island	9.0	5.4%	9.2%
6	Massachusetts	8.8	7.3%	35%
7	Connecticut	8.7	3.8%	34%
8	Virginia	8.3	6.0%	22%
9	Washington	8.3	5.2%	26%
10	Utah	8.1	-5.7%	15%

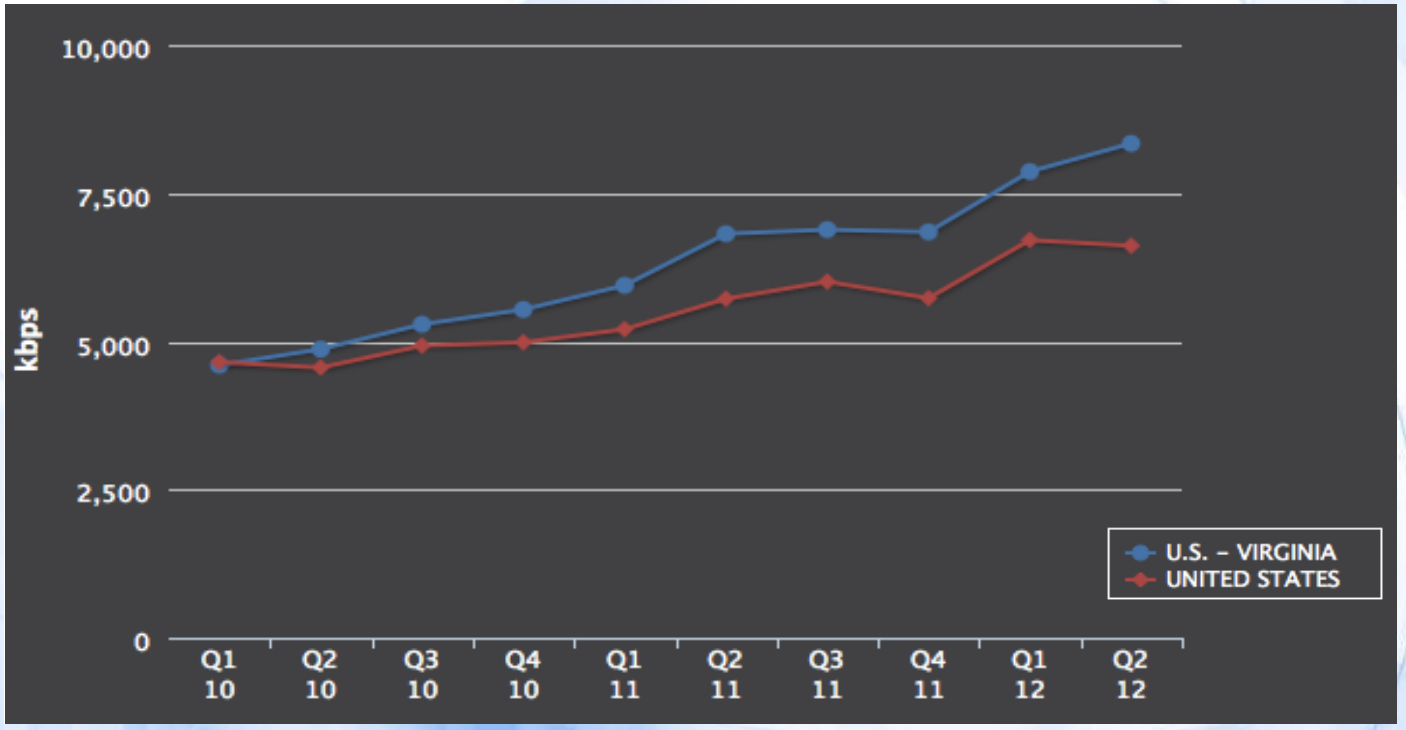
Average Measured Connection Speed by State

Source: *Akamai State of the Internet*, 2Q 2012 Report

Broadband Benchmarks: Virginia vs. U.S.

- Average broadband speeds within the Commonwealth of Virginia have nearly doubled since 2010, from below 5 Mbps to the current 8.3 Mbps
- Since 2010, Virginia has remained well ahead of the national average in average download speeds

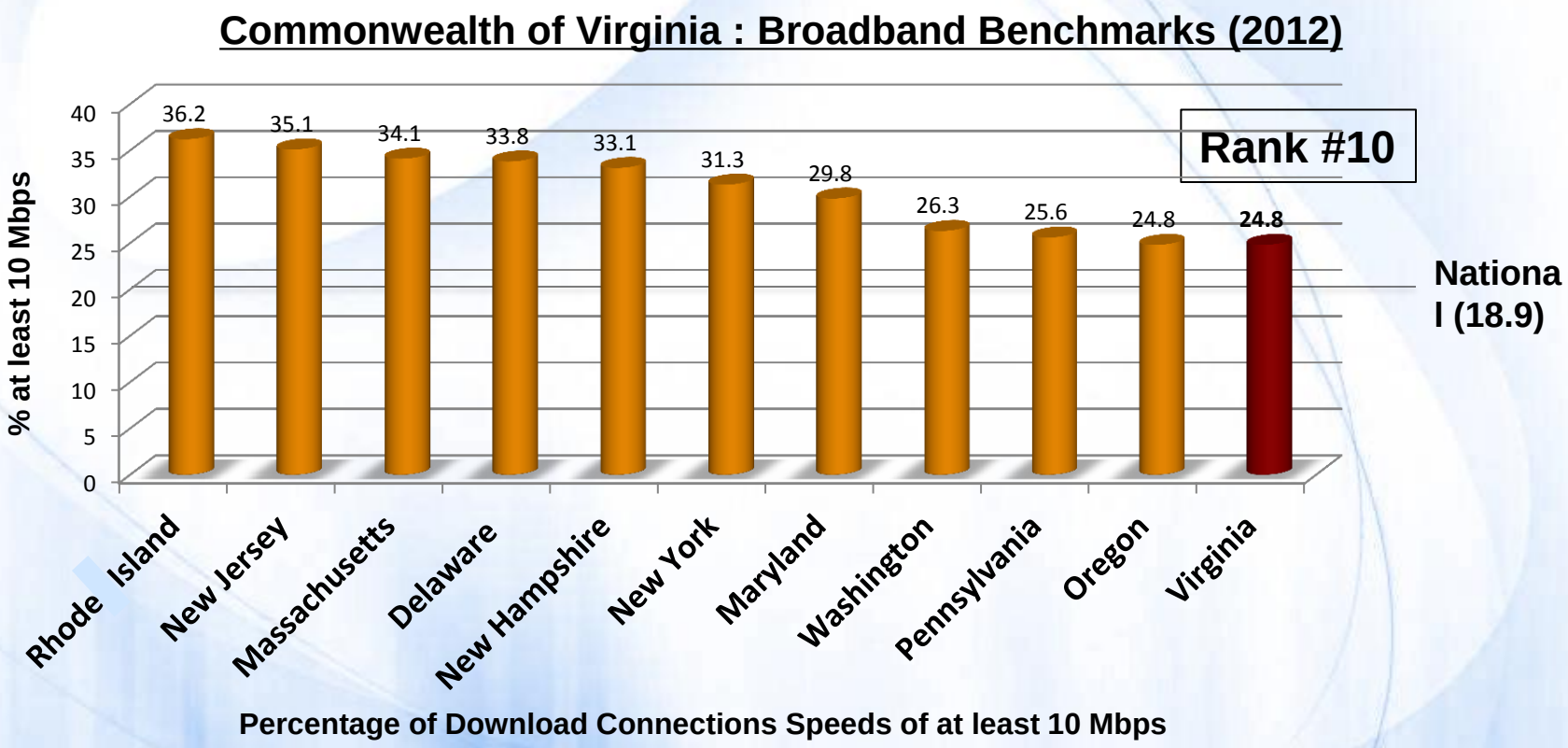
Commonwealth of Virginia Connection Speed Trends: 2010-2012



Source: *Akamai State of the Internet*, 2Q 2012 Report

Broadband Benchmarks: Virginia vs. U.S.

- Virginia ranks among the top 10 States in percentage of download connection speeds of at least 10 Mbps, an important benchmark for key sectors (i.e., health care) requiring high-speed connections.



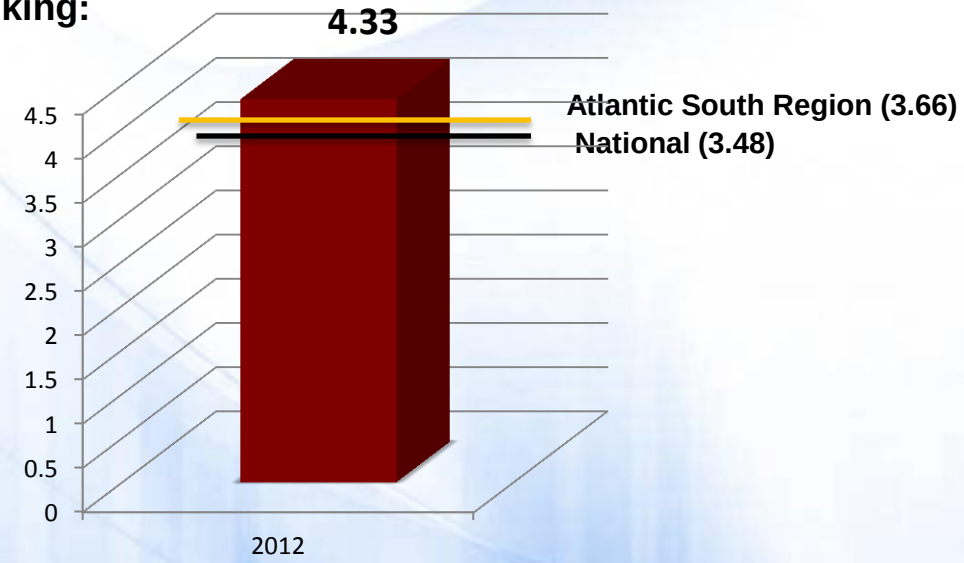
Source: FCC Internet Access Services, June 2012 Report (Table 20)

EHR Benchmarks - Hospitals: Virginia vs. U.S.

- Virginia has jumped from 5th to 4th in its ranking since last year in hospital adoption of Electronic Medical Records
- Commonwealth hospitals continue to lead in the region and nationally in the deployment of key EMR-related capabilities, including CPOE and Clinical Decision Support

Commonwealth of Virginia Hospitals:
EMR Adoption Model Score (Q3, 2012)

Virginia National Ranking: **#4**



Mean EMR Adoption Score

US EMR Adoption Model™

Stage	Cumulative Capabilities	2011 Q3	2012 Q3
Stage 7	Complete EMR, CCD transactions to share data, Data warehousing, Data continuity with ED, ambulatory, OP	1.1%	1.8%
Stage 6	Physician documentation (structured templates), full CDSS (variance & compliance), full R-PACS	4.0%	7.3%
Stage 5	Closed loop medication administration	6.3%	11.5%
Stage 4	CPOE, Clinical Decision Support (clinical protocols)	12.3%	14.0%
Stage 3	Nursing/clinical documentation (flow sheets), CDSS (error checking), PACS available outside Radiology	46.3%	41.7%
Stage 2	CDR, Controlled Medical Vocabulary, CDE, may have Document Imaging, HIE capable	13.7%	11.4%
Stage 1	Ancillaries - Lab, Rad, Pharmacy - All Installed	6.6%	4.8%
Stage 0	All Three Ancillaries Not Installed	10.0%	7.5%

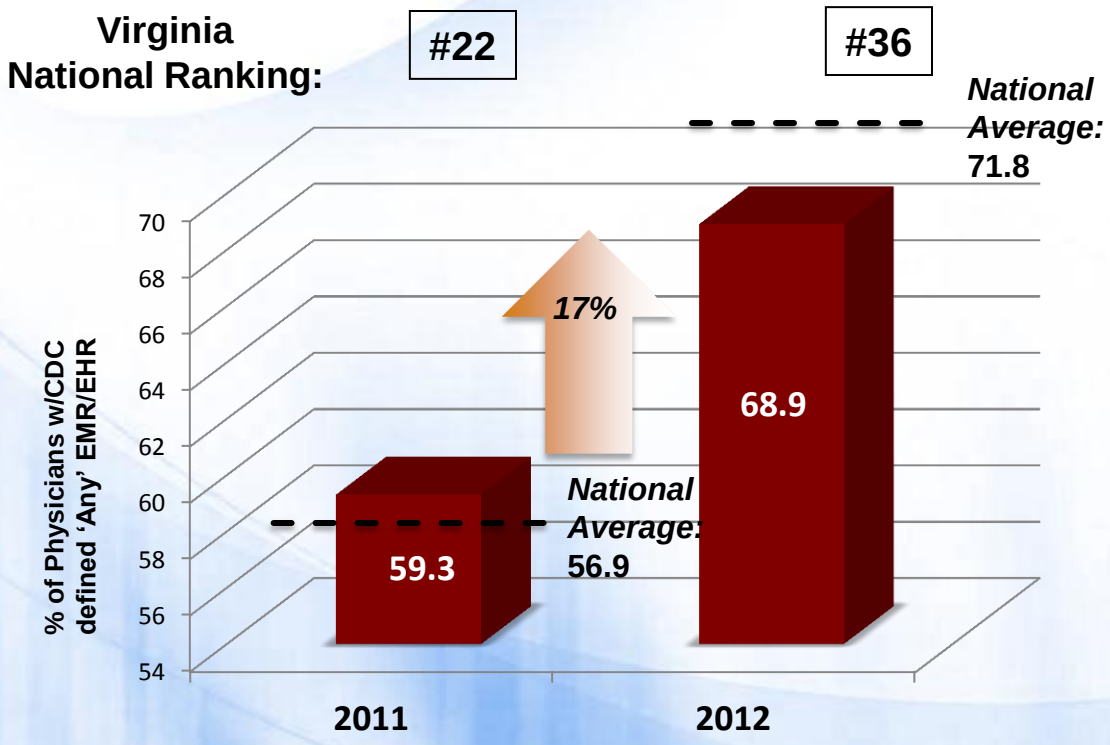
Source: HIMSS Analytics, Q3 2012

Note: VA 2011 score: 3.97 : HIMSS Analytics, Q3 2012

EHR Benchmarks - Physicians: Virginia vs. U.S.

- The percentage of Commonwealth of Virginia physicians who have adopted an EHR system has grown substantially over the last year (by 17%)
- However, the Commonwealth's rank among U.S. states has dropped due to a greater improvement in the national physician EHR adoption rate (by 26%)

Commonwealth of Virginia Physicians: EHR Adoption 2011- 2012



Note: *CDC definitions:*

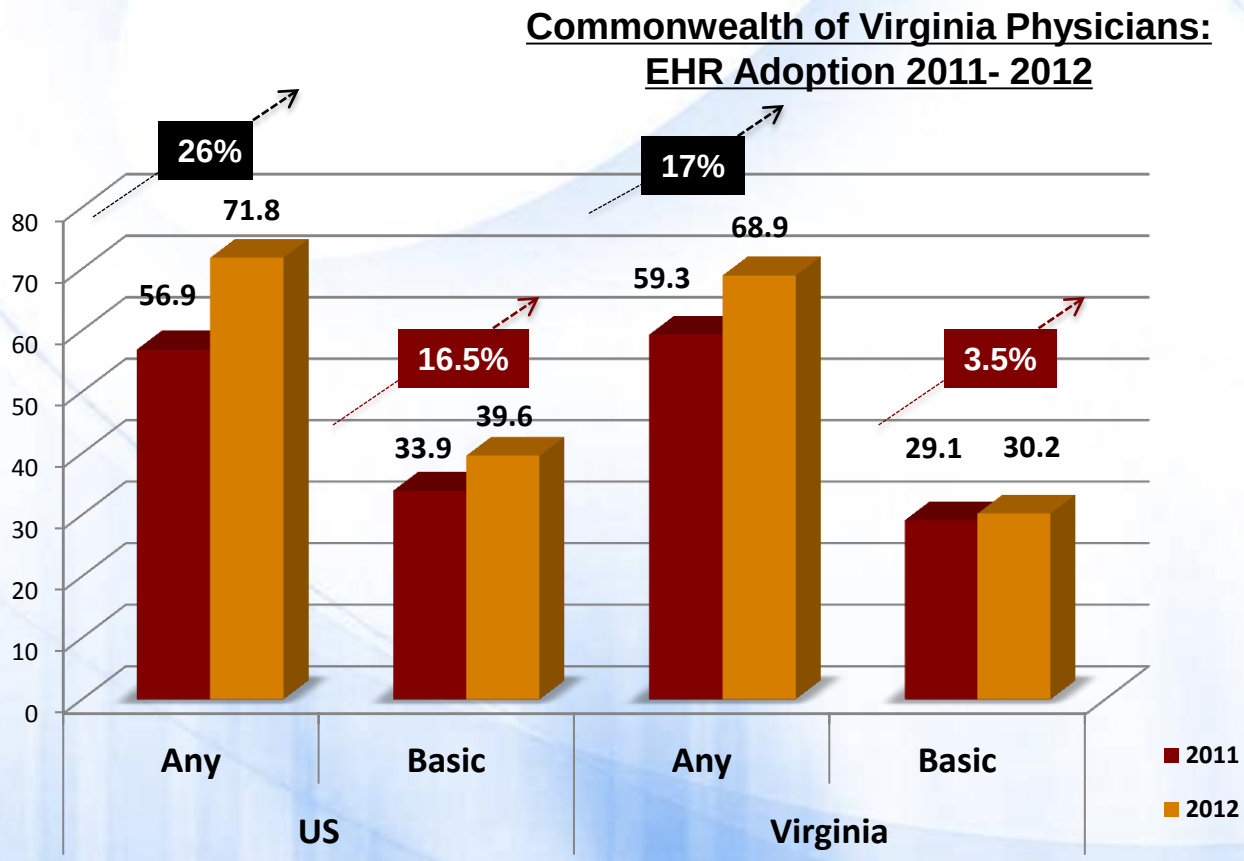
'Any' EMR/EHR system - a medical or healthcare records system that is all or partially electronic (excluding systems solely for billing).

'Basic EMR/EHR system': A system that has all of the following functionalities: patient history and demographics, patient problem lists, physician clinical notes, comprehensive list of patients' medications and allergies, computerized orders for prescriptions, and ability to view laboratory and imaging results electronically

Source: CDC NCHS 2012 Preliminary data

EHR Benchmarks - Physicians: Virginia vs. U.S.

- The largest percentage improvement for both groups has come in adoption of the less rigorous EHR/EMR systems



Note: *CDC definitions:*

'Any' EMR/EHR system - a medical or healthcare records system that is all or partially electronic (excluding systems solely for billing).

'Basic' EMR/EHR system: A system that has all of the following functionalities: patient history and demographics, patient problem lists, physician clinical notes, comprehensive list of patients' medications and allergies, computerized orders for prescriptions, and ability to view laboratory and imaging results electronically

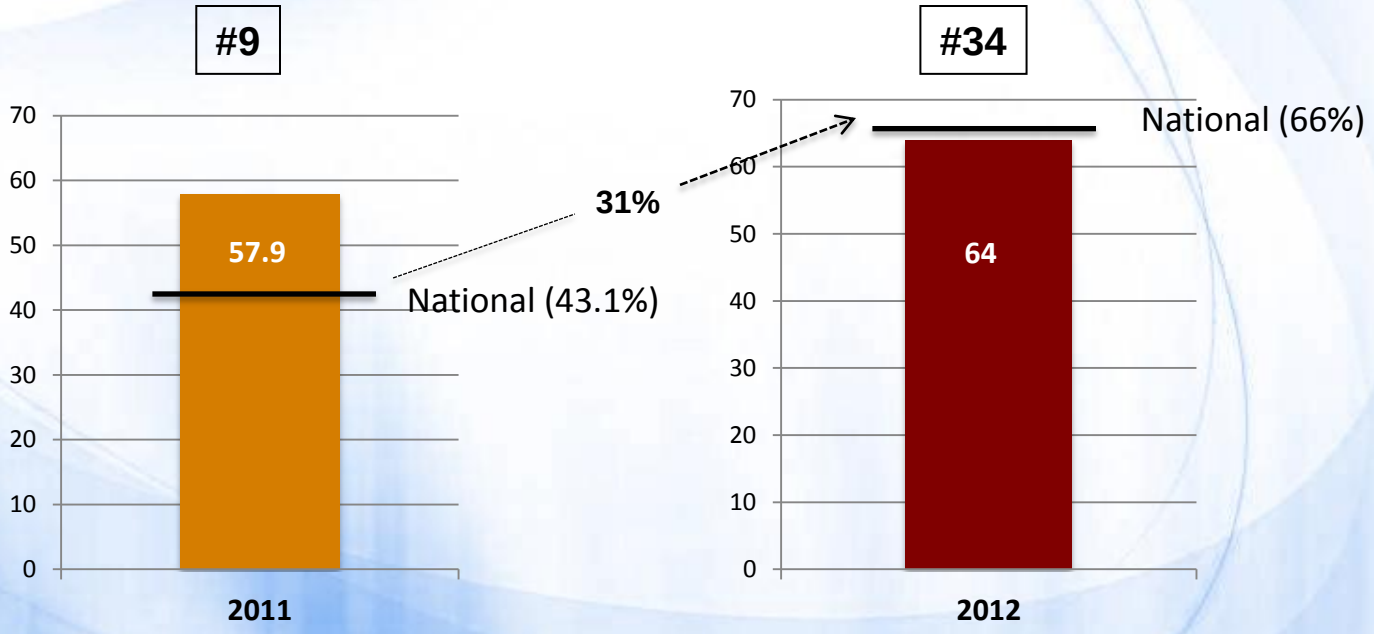
Source: CDC NCHS 2012 Preliminary data and 2011 data

EHR Benchmarks - Physicians: Virginia vs. U.S.

- The average number of physicians who have applied for, or intend to, pursue 'meaningful use' incentives in Virginia has grown moderately, lowering Virginia's ranking in physician 'meaningful use readiness'
- Consistent with physician EHR adoption rates nationally, the national average has improved by 31% while Virginia's average has improved by just over 10%

Commonwealth of Virginia Physicians:
Intent to Participate in Meaningful Use Incentive Programs (2011-2012)

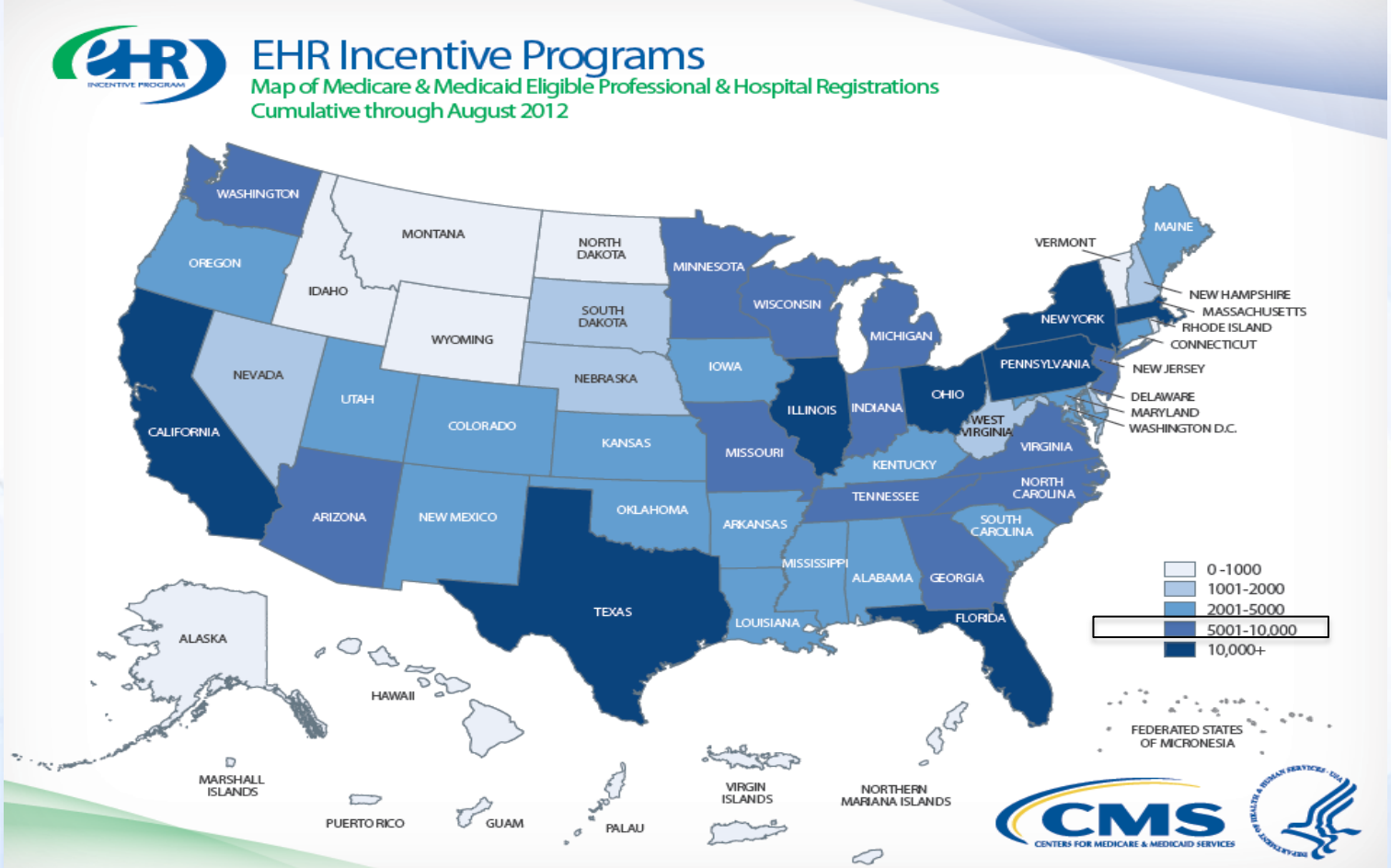
Virginia National Ranking:



Source: CDC NCHS 2012 Preliminary data and 2011 data

EHR Incentive Applications by Eligible Providers

- The Commonwealth continues to rank in the top third of U.S. states in applications submitted by eligible providers for EHR incentive payments (as of August 2012)



HIE Benchmarks: Virginia vs U.S.

- The Commonwealth is among the top 15% of states with 5 or more HIEs:

Focus	Pediatrics, children, OB	Disabled & Veterans	Disabled & Veterans	Virginia Residents	Alexandria & Planning District ED patients
Initiatives & Services	EMR, Practice Management; ePrescription	Disability Coverage verification and delivery; VA HIE Support	Disability Coverage verification and delivery;	(NHIN) Direct Messaging; Exchange; S&I, Org & Governance; COV-HIE Plan Components	Inova Alexandria MEDs-ED link – Nationwide eMedication Exchange Pilot Program; "File for Life" – Initial EMR record platform development
Established	2009; Private	2004, Private	2004; Private, grant-based	Oct 25, 2011; Public SHIE COV_HIE Designated	August, 2007 Non-Profit, grant-based
Affiliation & Partners	Children's National Medical Center	MedVirginia, Centra, Riverside Hospital, Bon Secours	Centra Hospital, Sentara, VHA, Kaiser, Riverside Hospital, Bon Secours	Community Health Alliance, MedVirginia; VDH; Inova Health	Inova Health Systems, GE Healthcare, NOVA, GMA, Sentara Potomac

Note: An additional HIE - CareSpark – operated from 2005-2011 serving 17 counties in east TN and southwest VA at its peak but lacked a post-grant sustainable business model

HIE Benchmarks: Virginia

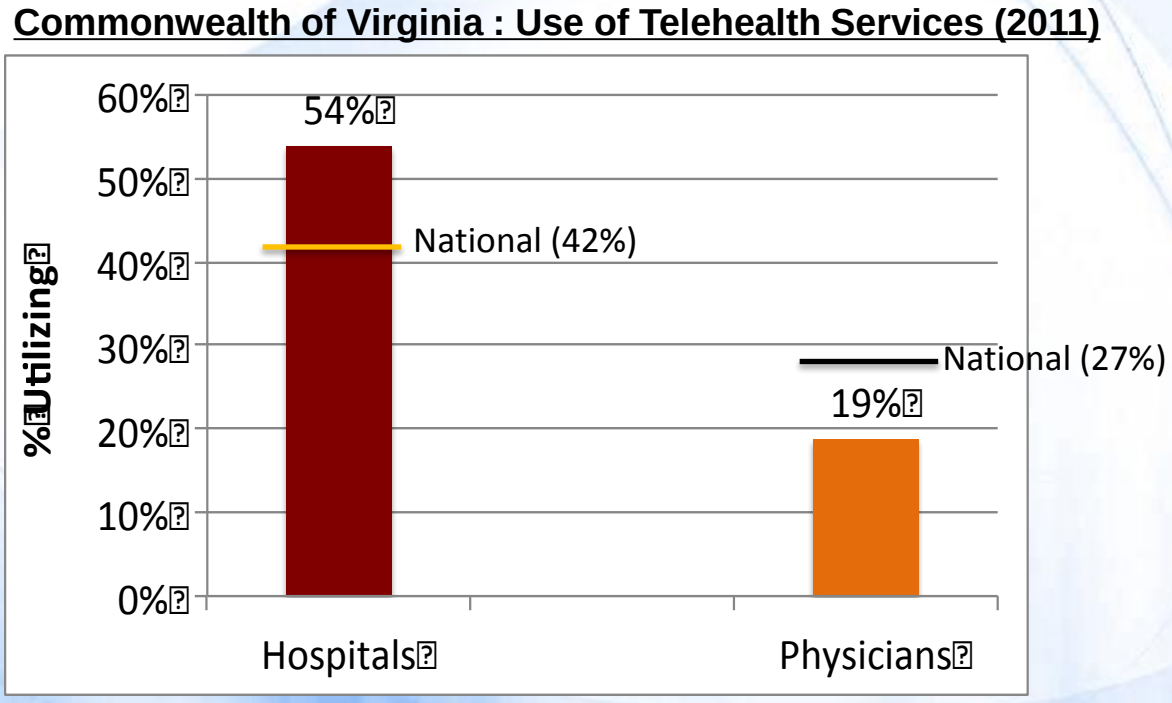
- HIEs are technologically established but still early in adoption and limited in their scope
- Virginia is an established HIE market and MedVirginia (see below) has been at the center of HIE development and strategy
- MedVirginia also played a key role in the consortium called ConnectVirginia that was awarded the Commonwealth's HIE Contract in 2011

MEDVIRGINIA

- First HIE in the Commonwealth with a range of active projects, pilots, relationships and established "brand" and is Led by National Thought Leader in HIE, Michael Matthews
- MedVirginia is a mature, experienced provider, now architecturally crucial to the VA's current and planned delivery of HIT with VHA/DoD at the core of its service offerings
- MedVirginia became the VA's HIE partner in the veteran-heavy Hampton Roads area for a Veterans Lifetime Electronic Record (VLER) pilot, a substantial expansion of a 450-patient San Diego effort underway at the time with Kaiser Permanente
- The VLER program goal is to enable a single electronic system to track the medical, benefits and administrative records of service members from their induction into the military throughout their lives as veterans.
- MedVirginia had established itself with the federal government earlier with a project to provide EHR to SSA claims examiners to verify disability for Social Security benefits
- VLER and SSA projects expanded to Riverside, Bon Secours, Centra and Sentara hospital systems in 2011/2012

Telehealth Benchmarks: Virginia National Leader

- The Commonwealth is a national leader in the use of telehealth – especially with-in the large and academic health systems including UVA, VCU and INOVA. VTN and MATRC (see below) both provide telehealth centers of excellence.
- The Virginia Telehealth Network (VTN) provides a central source of telehealth information and support. VTN works in partnership with MATRC to host an annual conference that has become the largest regional telehealth conference in the nation.
- The Mid-Atlantic Telehealth Resource Center (MATRC) was created in 2011 via a HRSA Grant Award. MATRC works in conjunction with VTN, the UVA Center for Telehealth and a large and diverse Board to provide telehealth planning and operational resources to providers in a multi-state area including seven Mid-Atlantic States and the District of Columbia



Source: COV 2011 Broadband/HIT Survey; National data sourced from *Hospitals and Health Networks* Most Wired 2011 survey.

Telehealth Challenges and Opportunities

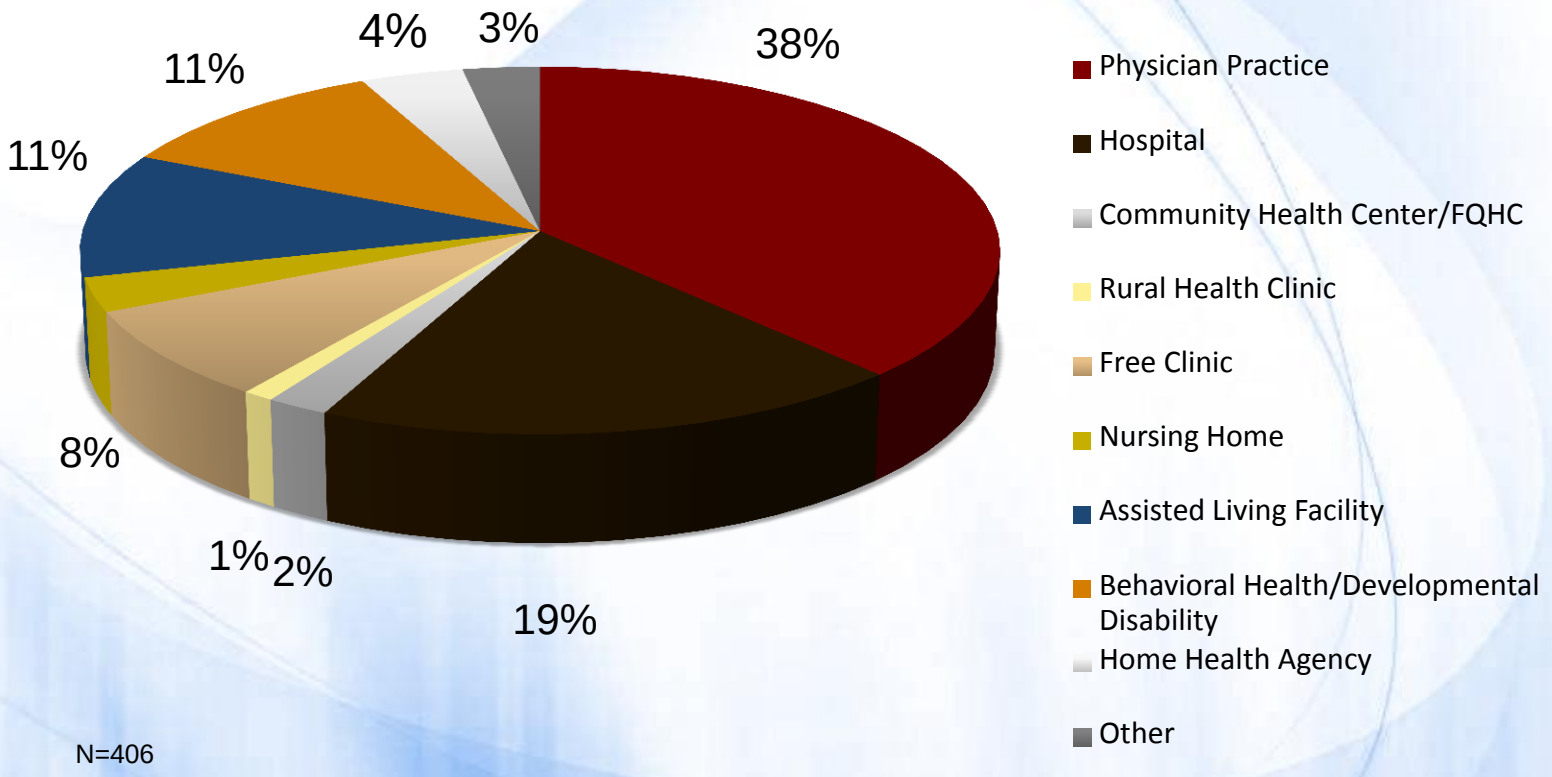
Leading telehealth policy advocates have historically identified a number of barriers to telehealth. These barriers, however, are diminishing as telehealth continues to improve patient access and outcomes, address workforce shortages and reduce healthcare costs:

- *Reimbursement*: Historically limited (and varied by state), along with sub-scale grant funding. Landmark comprehensive bill H.R. 6719, introduced 12/30/12, eliminates arbitrary Medicare and Medicaid coverage restrictions on telehealth.
- *Outcomes*: Prior disputes over sufficiency of clinical outcomes research/results being overshadowed by large-scale results in practice (e.g. Veterans Administration)
- *Licensure and credentialing*: Providers historically required to be licensed in multiple states/multiple systems. H.R. 6719 allows physicians to practice telemedicine across state lines without being licensed in both states.
- *Confidentiality*: Security/privacy (HIPAA) concerns over patient data. Vendors creating secure, HIPAA-compliant cloud based software solutions.
- *Telecommunications requirements/costs*: Broadband service is required to support telehealth. Increasing penetration of lower cost broadband service and renewed FCC support for rural broadband service will lower if not eliminate this significant barrier
- *Integration/Interoperability with EMRs/HIEs*: To date telehealth has not been able to leverage the CMS funded EHR roll-out and has remained outside of traditional HIT departments and services. However, Stage 2 speaks to Care Coordination as a requirement, which will lead to more integrated telehealth solutions.
- *Policy alignment*: Federal agencies historically lacked coordination on telehealth. However, CMS, ONC, and FCC now aligned on issues beneficial to telehealth.

Detailed Analysis:
All Providers 2012

Survey Demographics: All Providers

- Provider participation was significant in hospital and physician populations, with additional support from community health centers, clinics, behavioral and home health providers, and nursing and assisted living facilities

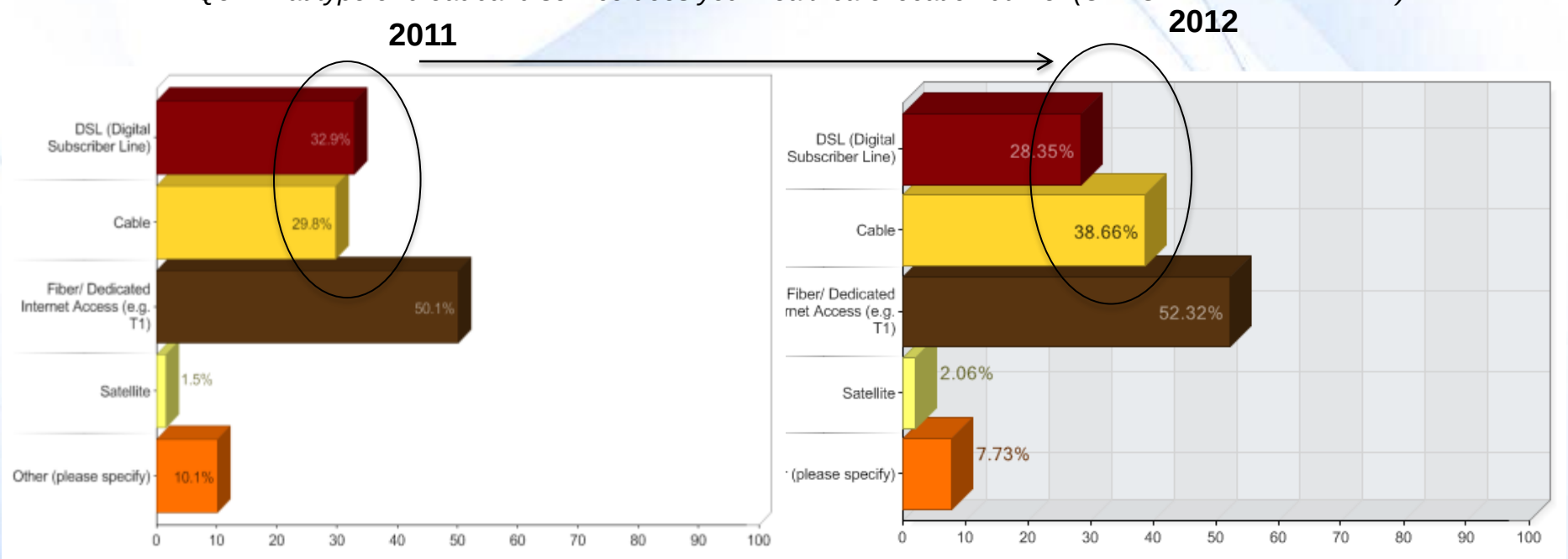


N=406

Broadband Usage by Type of Service

- The share of all providers using some form of broadband remains at nearly 100% (95.6%)
- Fiber is the most common type of service at over 50%, Cable has switched positions with DSL (Digital Subscriber Line) with a 10% increase
  - This would indicate that providers are moving to higher capacity lines to support operations
  - The expansion of cable networks and competitiveness of their service offerings make them a viable option for DSL users wishing to switch - (Leading US Cable companies added 575K subscribers; US phone companies added 5,000 (1)

Q3. What type of broadband service does your healthcare location utilize: (CHECK ALL THAT APPLY)



n=517. Note that percentages add up to more than 100% because multiple responses were allowed

N=407 Note that percentages add up to more than 100% because multiple responses were allowed

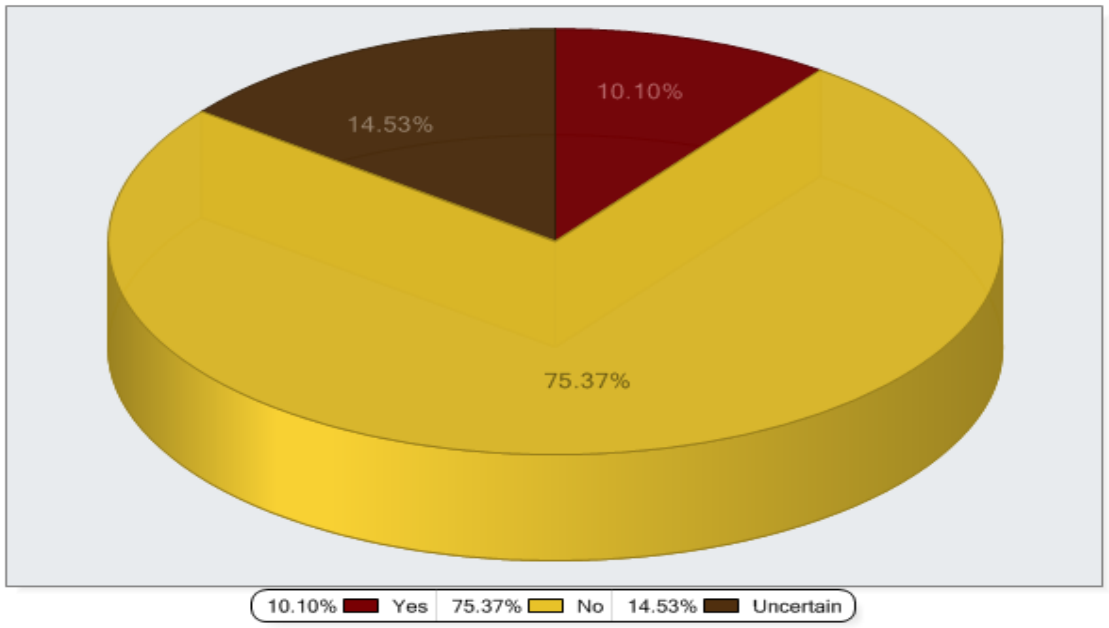
Broadband Service: High-speed Internet access (e.g. DSL, Cable, Fiber, etc..) providing two-way data transmission with advertised speeds of at least 768 kbps downstream and 200 kbps upstream to end users. (definition per National Telecommunications Information Administration)

(1) November 14, 2012 – Quarterly Report: Leichtman Research Group, Inc.

Broadband Provider Switch

- The survey indicates that 10% of surveyed respondents made a switch in their broadband provider this year
- It can be assumed that these participants expanded broadband capacity replacing a DSL connection for higher-speed connectivity

Q2. Have you switched broadband providers in the last year?

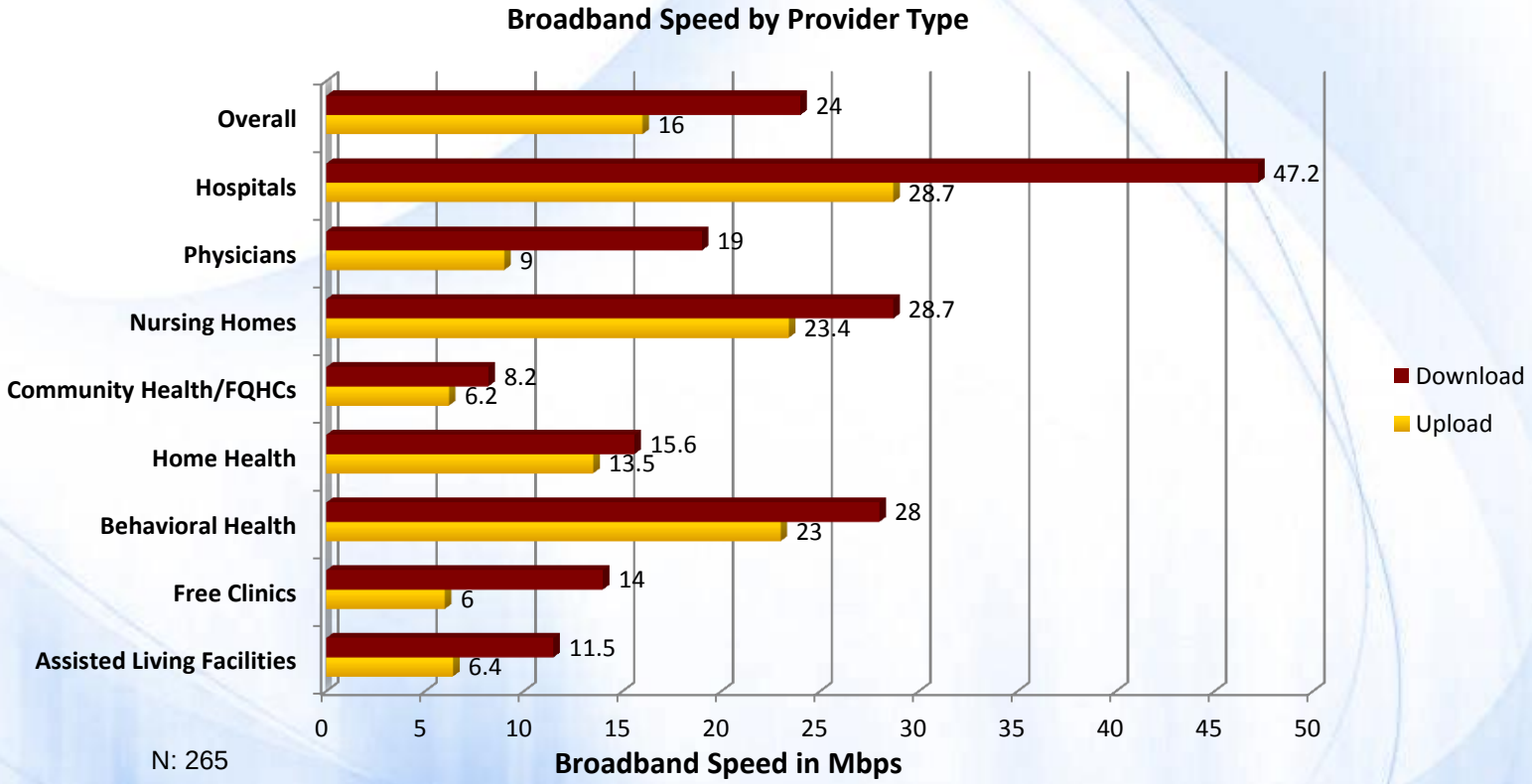


n=407.

Source: Broad Axe COV HIT Survey 2012

2012 Reported Broadband Speeds

- Overall, broadband speeds continue to trend faster across all provider segments, particularly with hospitals, which have shown more than a 35% increase over last year's reported average download speed of 34mbps



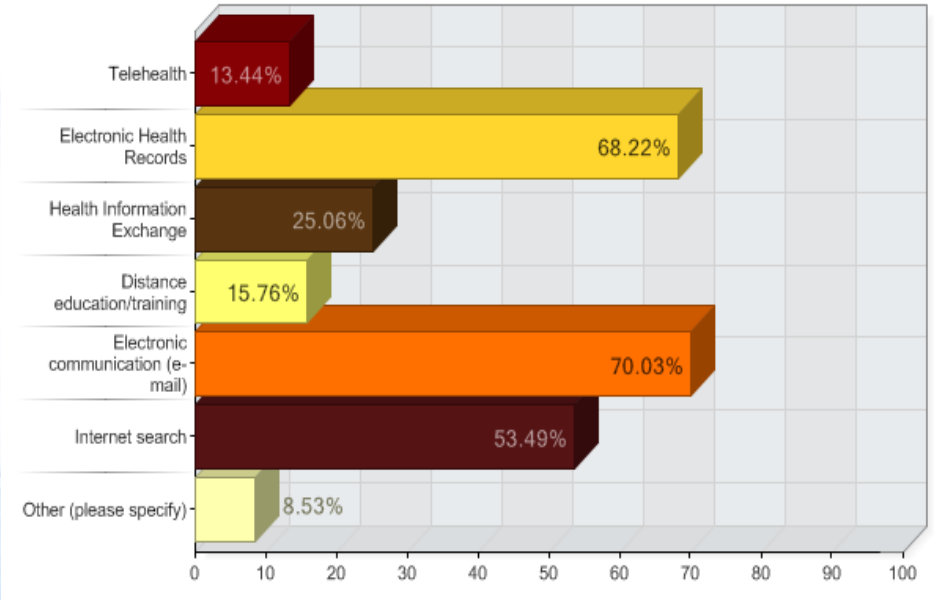
Broadband Service: High-speed Internet access (e.g. DSL, Cable, Fiber, etc..) providing two-way data transmission with advertised speeds of at least 768 kbps downstream and 200 kbps upstream to end users. (definition per National Telecommunications Information Administration)

Source: Broad Axe COV HIT Survey 2012

Importance of Broadband for Health IT

- Broadband connectivity remains a clear requirement for Electronic Health Record priorities, but also for basic e-mail and internet search
- Telehealth continues to be perceived as significantly less important than EHRs in terms of broadband's primary impact, reflecting the sector's focus on EHR implementation and incentives

Q6. For which of the following functions is broadband connectivity currently MOST essential?



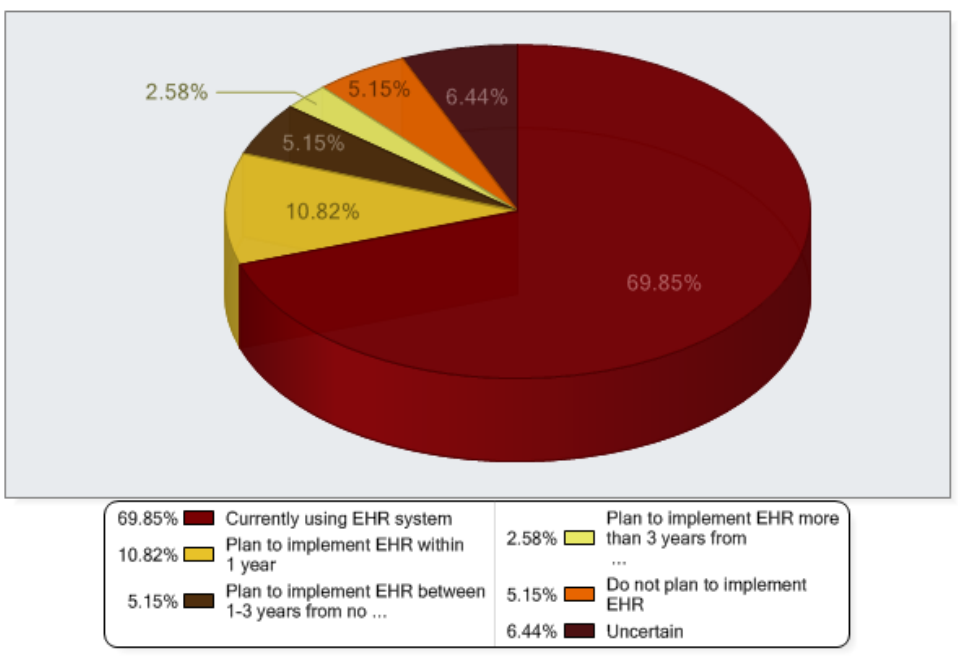
N=407; note the numbers do not sum to 100% due to more than one reply

Source: Broad Axe COV HIT Survey 2012

Electronic Health Records Utilization

- 70% of respondents are currently utilizing an Electronic Health Records (EHR) system at their location
- Among all segments, expected implementation of EHR systems within 3 years is close to 90%

Q9. How would you characterize your use of an Electronic Health Record (EHR) system?



N=389

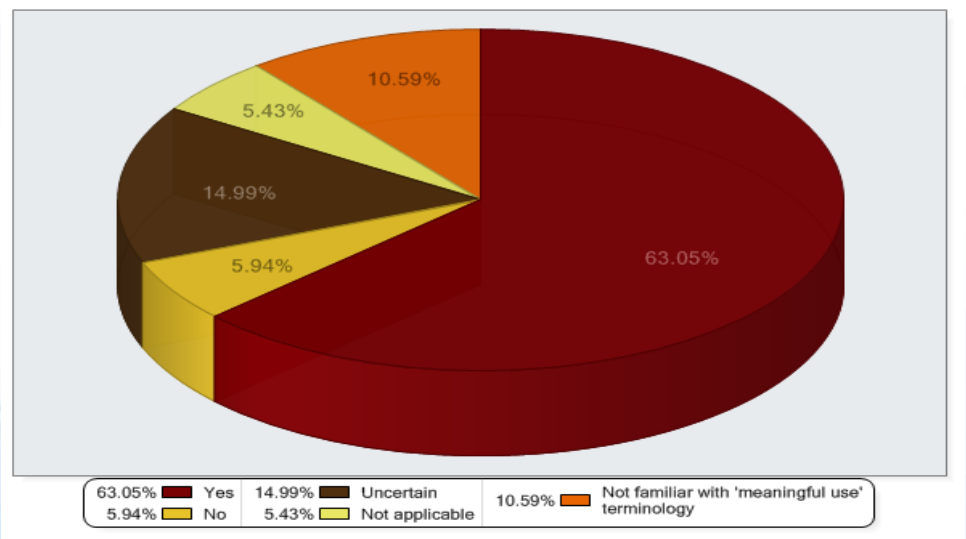
Electronic Health Records: digital records of patient health information generated by one or more encounters in any care delivery setting.

Source: Broad Axe COV HIT Survey 2012

EHR Implementation and Meaningful Use

- Almost 65% of responding providers believe they will meet U.S. Department of Health and Human Services' criteria for 'meaningful use' of an EHR system
- The question was modified this year to remove reference to the 2015 deadline but had little if any impact on the responses

Q10. Do you expect to meet the Department of Health and Human Services criteria for 'meaningful use' of an EHR system in all stages?



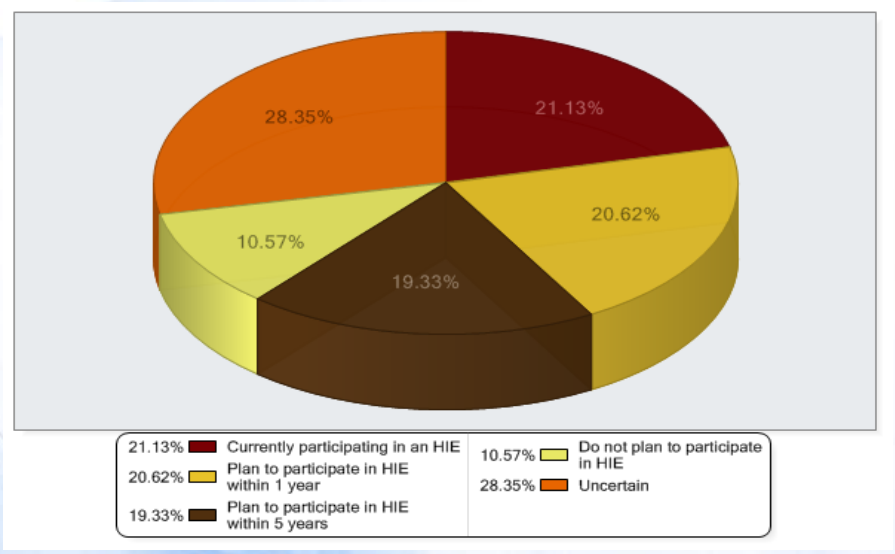
n=388

Source: Broad Axe COV HIT Survey 2012

Health Information Exchange Participation

- While over 20% of responding providers participate in an Health Information Exchange (HIE**),** more than 50% expect to participate within 5 years
- Twenty-eight percent still indicate uncertainty about their plans, but this figure is 7% lower than last year's survey result

Q11. Does your location currently participate with other healthcare providers in a Health Information Exchange (HIE)?



n=389

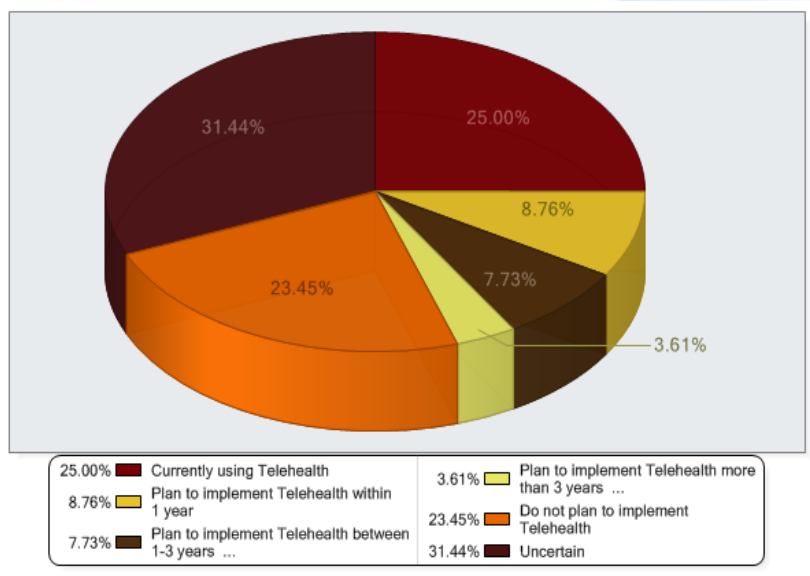
Health Information Exchange: a network characterized by the reliable and secure transmission, access, and retrieval of healthcare-related data among diverse facilities, health information organizations (HIOs) and government agencies according to national standards.

Source: Broad Axe COV HIT Survey 2012

Telehealth Usage and Key Services

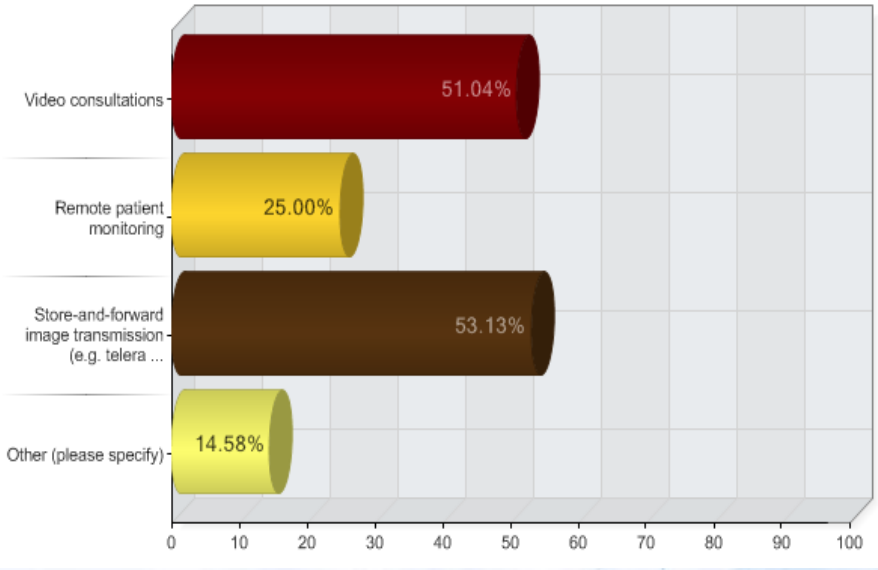
- 25% of all responding providers are using Telehealth now, but more than 40% expect to be using Telehealth within 3 years; a high degree of uncertainty in plans persists
- Video Conferencing is now nearly even with Store-and-Forward as a leading Telehealth technology being used by providers, a change from last year's survey

Q7. How would you characterize your location's use of Telehealth services?



n=389

Q8. Which of the following Telehealth services do you utilize? (CHECK ALL THAT APPLY)



n=138. Note that percentages add up to more than 100% because multiple responses were allowed

Telehealth: the use of advanced telecommunications to aid in the clinical practice of medicine, using technologies that enable video consultation, remote monitoring, and store-and-forward image transmission over fixed or mobile networks.

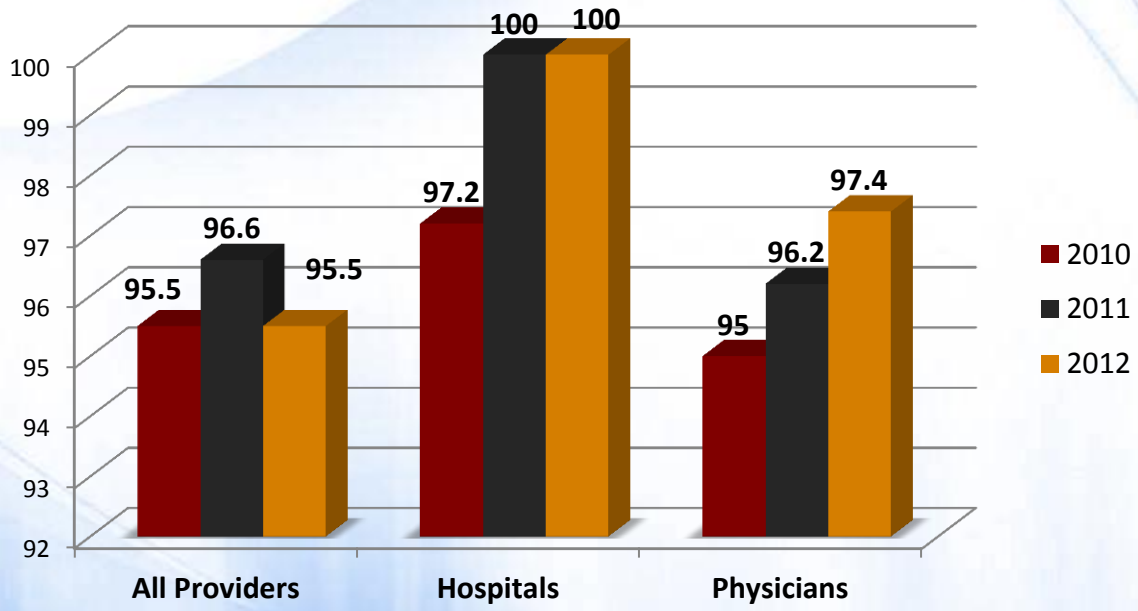
Source: Broad Axe COV HIT Survey 2012

Comparative Analysis: 2010-2012

Comparative Analysis: Broadband Usage

- Broadband usage is very high for all types of health care providers in the Commonwealth, at more than 95%
- Broadband usage across physicians surveyed over the last three years has approached 100%, a level that hospitals have maintained since the 2011 survey

Use of Broadband by segment (2010-12)



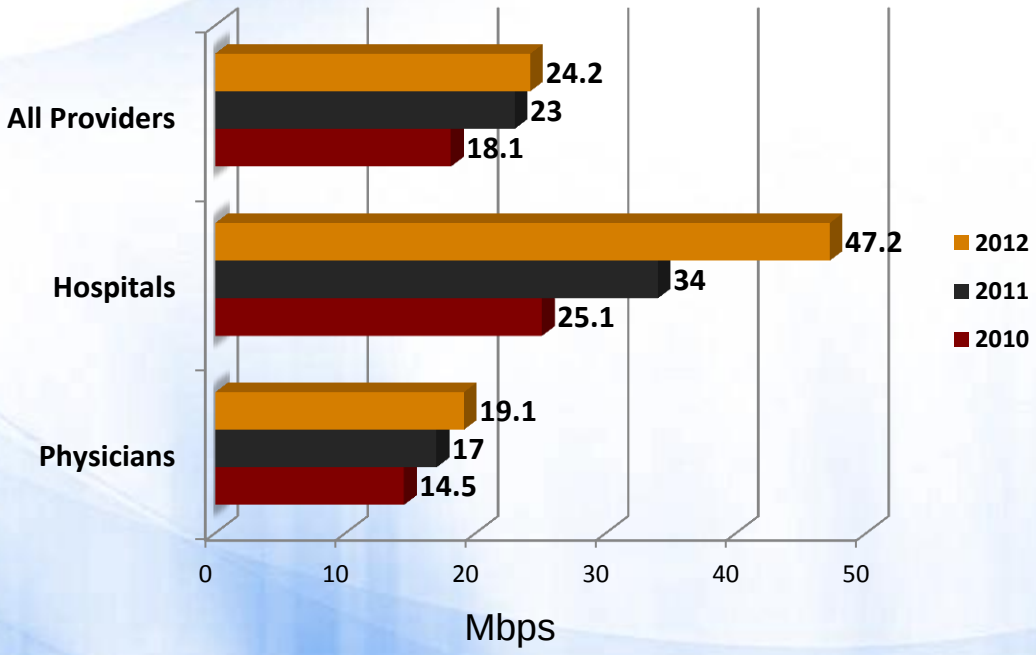
Notes: The drop for all providers is most likely due to the inclusion of ALFs in this years' respondent base, a group with moderately lower broadband needs

Source: Broad Axe COV HIT Analysis 2010-2012

Comparative Analysis: Broadband Speeds

- Broadband speeds for all health care providers surveyed are healthy, reflecting Virginia's strong state broadband ranking
- Increases in hospital broadband speeds have been most significant over the last year (39%) and have nearly doubled over the last two years
- These data likely reflect a shift to higher speed fiber and cable services among providers this year.

Average Broadband Download Speeds by segment (2010-12)

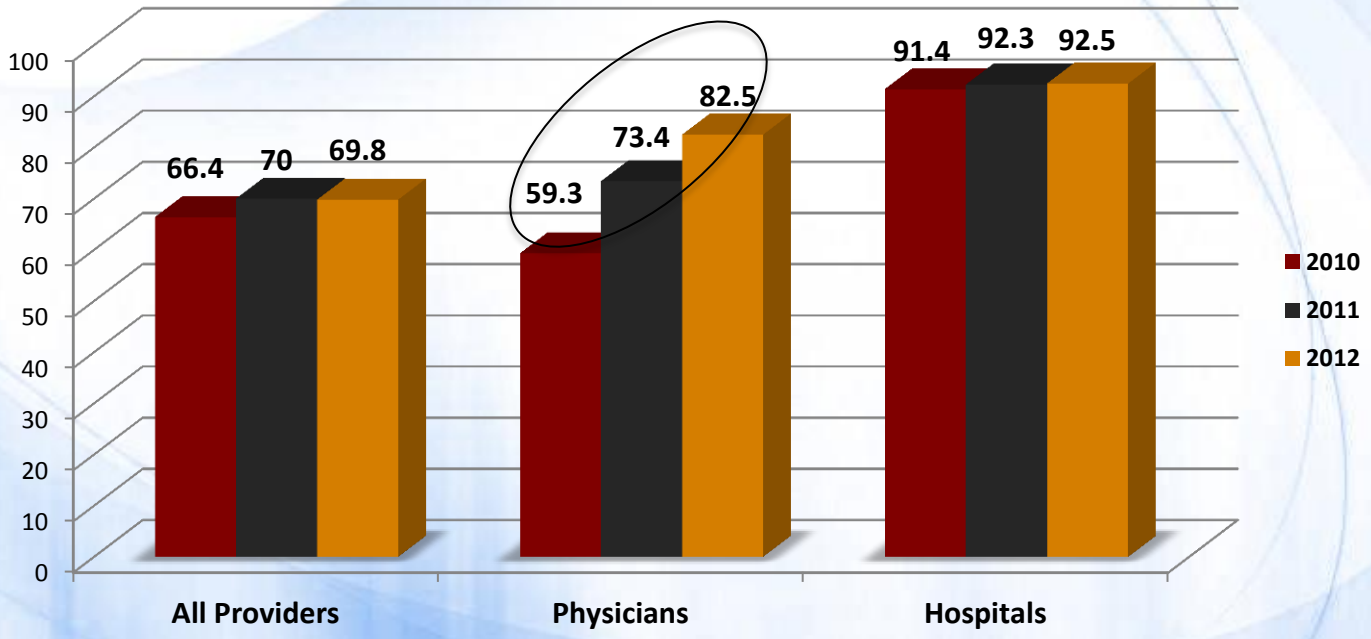


Source: Broad Axe COV HIT Analysis 2010-2012

Comparative Analysis: EHR Adoption

- All respondent groups have improved or maintained their adoption rates for EHR systems, with strongest improvement among physicians, an almost 40% increase since 2010
- Surveyed hospitals have maintained their high rate of adoption, which they had achieved well ahead of other provider segments

EHR Adoption by segment (2010-12)

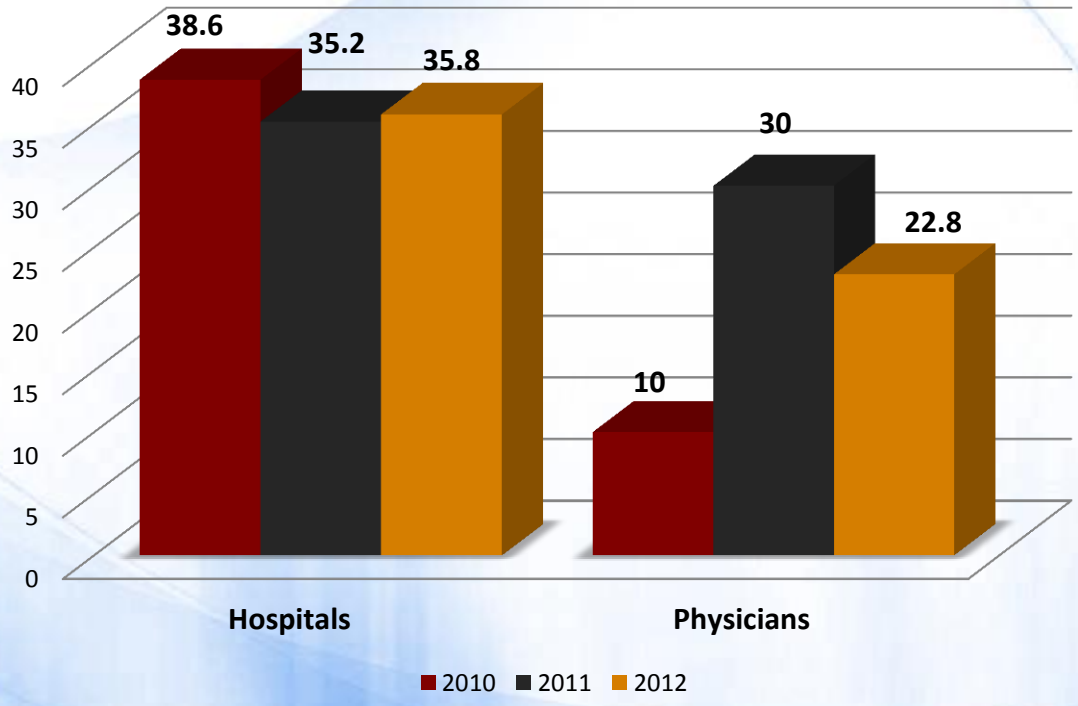


Source: Broad Axe COV HIT Analysis 2010-2012

Comparative Analysis: HIE Participation

- HIE participation by hospitals has remained relatively consistent at about 35-40%
- Physician participation in Health Information Exchange appears somewhat inconsistent from year-to-year suggesting they are in early, experimental stages

Participation in HIE by segment (2010-12)

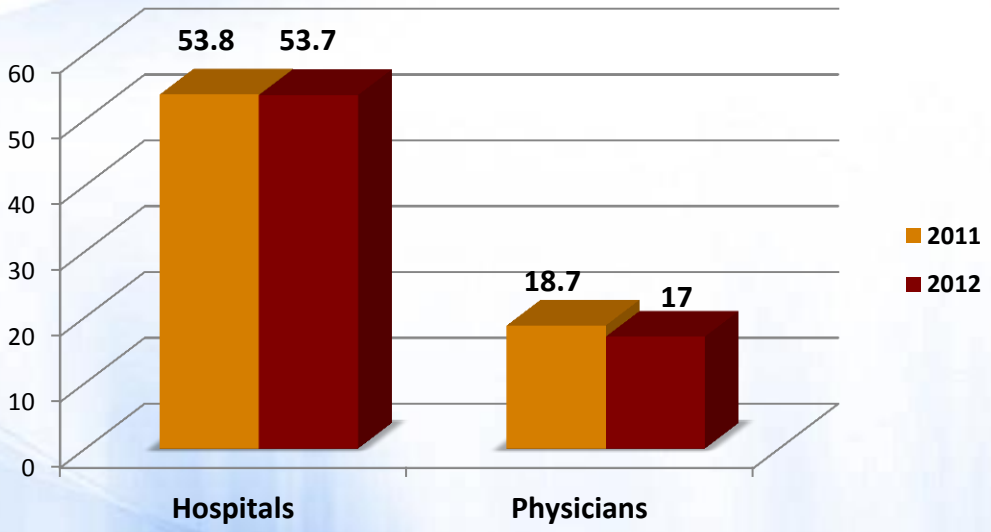


Source: Broad Axe COV HIT Analysis 2010-2012

Comparative Analysis: Telehealth Usage

- Hospital and physician adoption rates for telehealth services have remained flat year-on-year, with hospitals far exceeding physicians' use of telehealth
- Over 50% of all hospital respondents use a range of telehealth services and will continue to face incentives (e.g. readmission penalties, need for post-acute care continuity) that make telehealth an attractive option
- Ongoing reimbursement constraints continue to limit physician adoption of telehealth

Use of telehealth services by segment (2011-12)

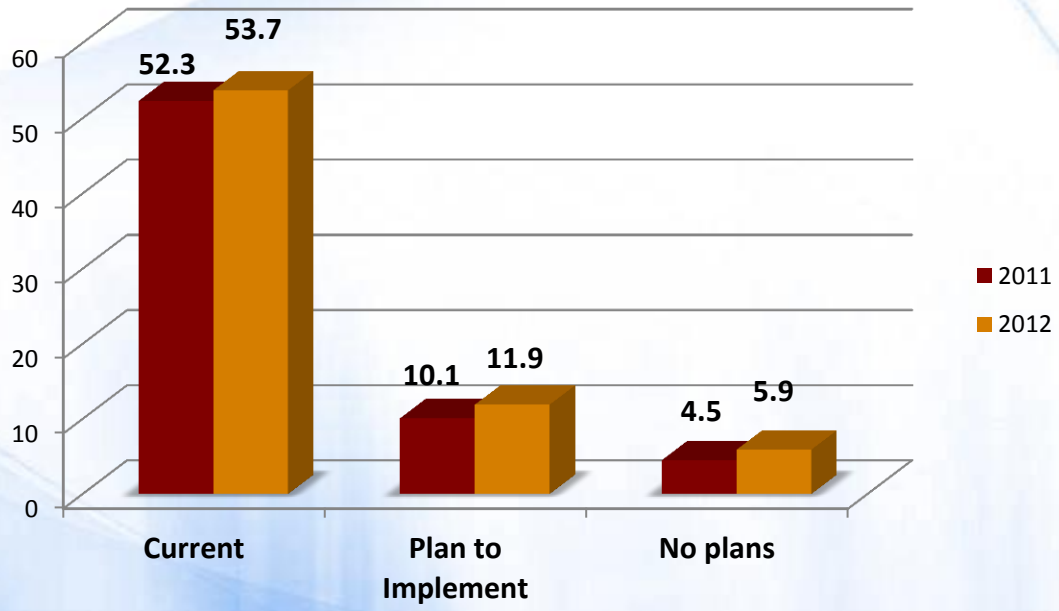


Source: Broad Axe COV HIT Analysis 2010-2012

Comparative Analysis: Telehealth Services Trend

- Hospitals continue to be the most significant users of telehealth services with a small margin more in this year's survey indicating current use
- The share of hospitals that plan to implement telehealth within 3 years has also grown slightly this year

Commonwealth of Virginia Hospital Telehealth Services Trend (2011-12)



Source: Broad Axe COV HIT Analysis 2010-2012

Potential Future Research Priorities

- Increase participation with additional key sectors
  - Skilled nursing facilities
  - Home care
  - Pharmacies
- Identify best practices and tools in other states for HIT coordination and benchmarking

APPENDIX

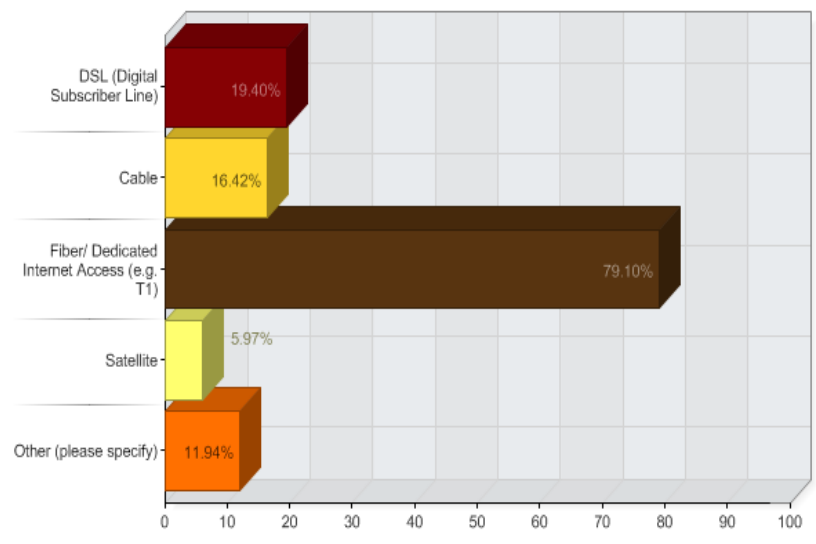
- Detailed Survey Summary Findings
  - Hospitals
  - Physicians
- Hospital System HIT Profiles
- Stage 2 Meaningful Use Brief

Detailed Analysis: Hospitals 2012

Broadband Usage by Type of Service

- All hospital respondents report the use of some of broadband, and speeds are significantly higher than other provider segments
- Fiber/Dedicated Internet Access is the most common type of service utilized by Hospital respondents

Q3. What type of broadband service does your healthcare location utilize: (CHECK ALL THAT APPLY)



n=89. Note that percentages add up to more than 100% because multiple responses were allowed

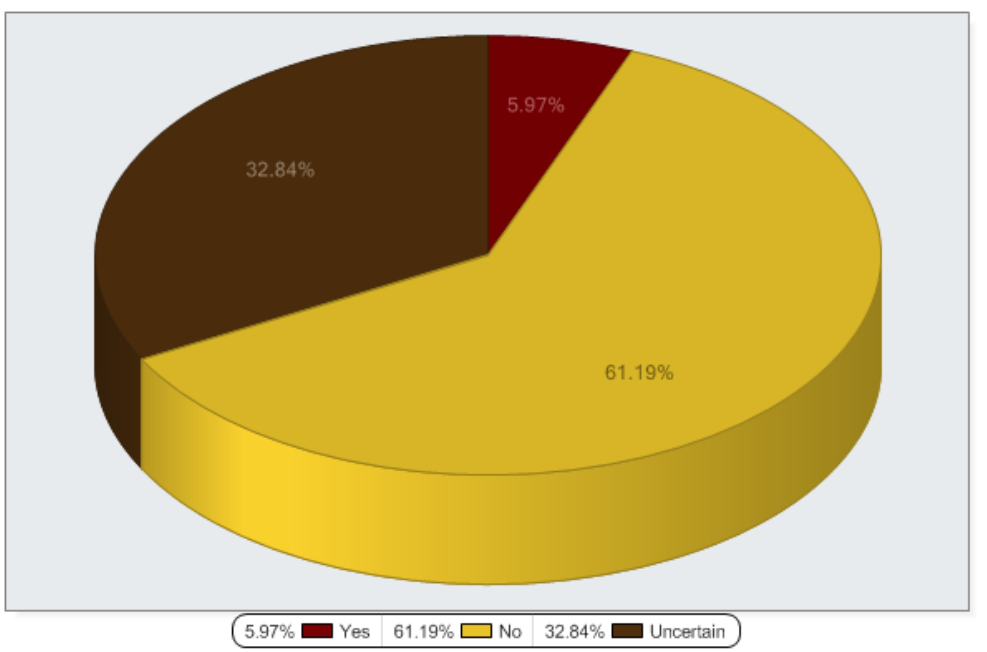
Broadband Service: High-speed Internet access (e.g. DSL, Cable, Fiber, etc..) providing two-way data transmission with advertised speeds of at least 768 kbps downstream and 200 kbps upstream to end users. (definition per National Telecommunications Information Administration)

Source: Broad Axe COV HIT Survey 2012

Broadband Provider Switch

- A small percentage (6%) of hospital respondents switched broadband providers over the last year
- Among provider segments, hospitals have demonstrated their commitment to high capacity broadband, making a switch to address speed or performance issues unlikely

Q2. Have you switched broadband providers in the last year?



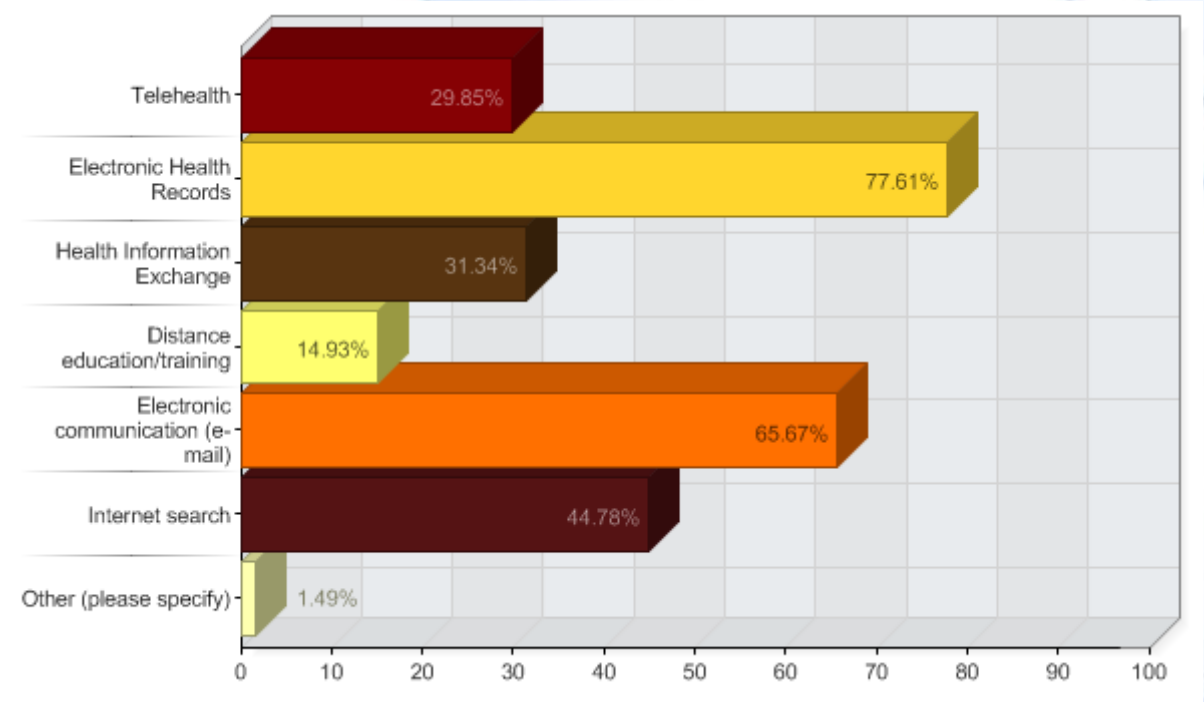
n=67.

Source: Broad Axe COV HIT Survey 2012

Importance of Broadband for Health IT

- Broadband continues to be a critical enabler for Health IT functions, with EHR the leading reason cited for its importance
- Telehealth as an “most essential” capability for broadband has increased among hospital respondents by 10% this year

Q6. For which of the following functions is broadband connectivity currently MOST essential?



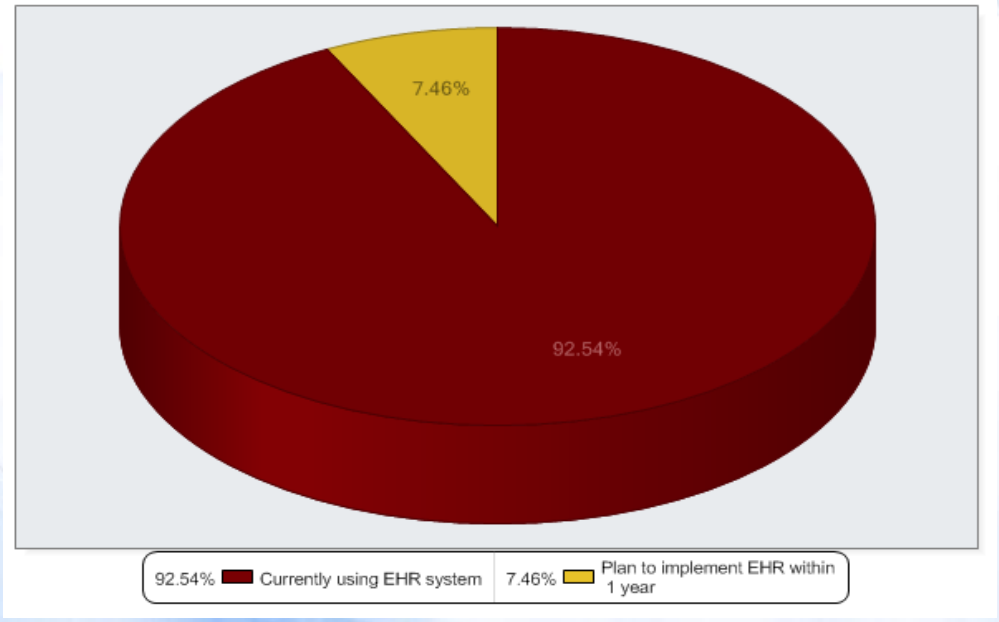
N=67; note the numbers do not sum to 100% due to more than one reply

Source: Broad Axe COV HIT Survey 2012

Electronic Health Records Utilization

- Most hospital respondents (92.5%) indicate they are currently using an EHR system
- The rate of EHR usage for is unchanged from last year's survey result as hospitals continue to implement systems to meet meaningful use requirements and pursue EHR incentives
- Intent to implement EHR in the near term has accelerated, with current non-user respondents all planning implementation within one year

Q9. How would you characterize your use of an Electronic Health Record (EHR) system?



N=67

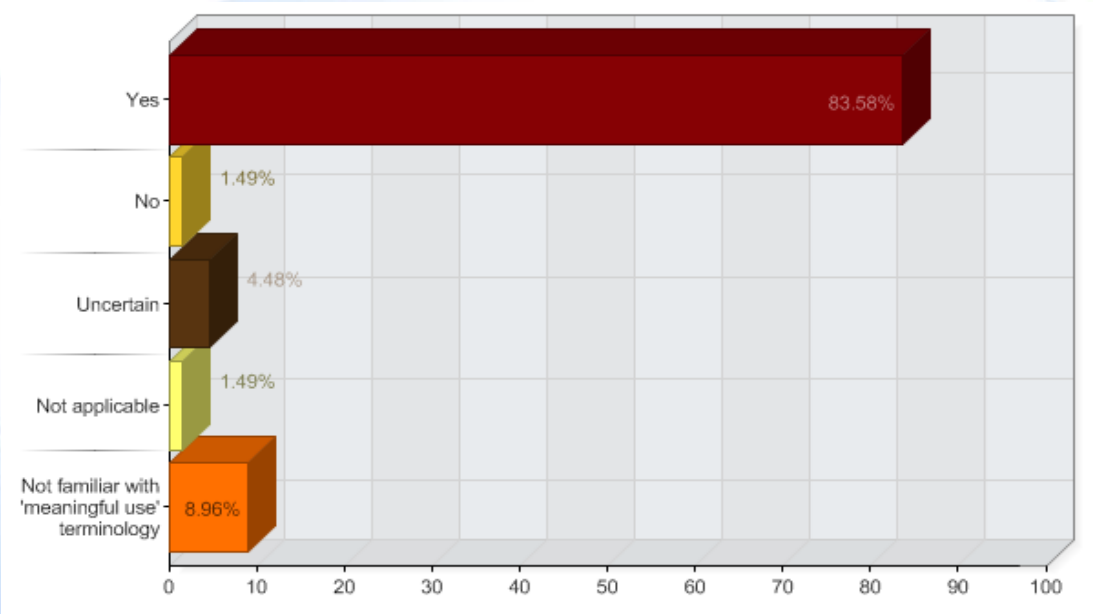
Electronic Health Records: digital records of patient health information generated by one or more encounters in any care delivery setting.

(1) Source: (ONC/American Hospital Association (AHA), AHA Annual Survey Information Technology Supplement 2011 data)

EHR Implementation and Meaningful Use

- With so many hospital respondents indicating EHR adoption, it is not surprising, that a strong majority (83%) would affirm expectations to meet federal ‘meaningful use’ criteria
- While a small percentage express uncertainty, that number has deceased by almost 10% from a year ago

Q10. Do you expect to meet the Department of Health and Human Services criteria for 'meaningful use' of an EHR system in all stages?



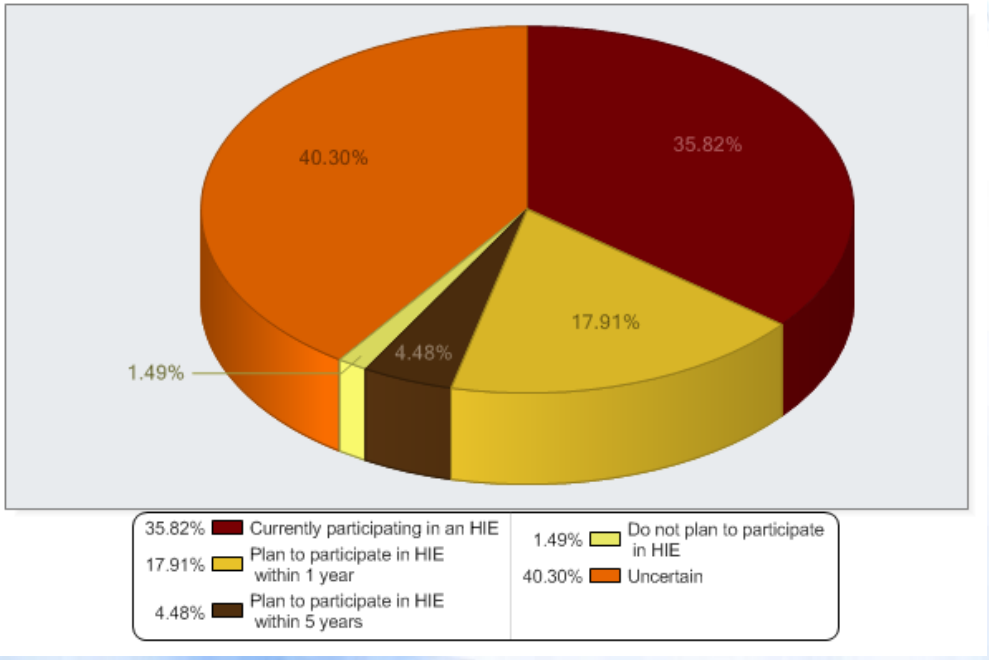
n=67

Source: Broad Axe COV HIT Survey 2012

Health Information Exchange Participation

- 36% of hospitals in the Commonwealth of Virginia are participating in Health Information Exchanges (HIE), about the same as a year ago
- Nearly 20% say they will participate in an HIE within a year, a 5% increase over last year
- However, uncertainty persists this year, as 40% again indicate they are uncertain about participation

Q11. Does your location currently participate with other healthcare providers in a Health Information Exchange (HIE)?



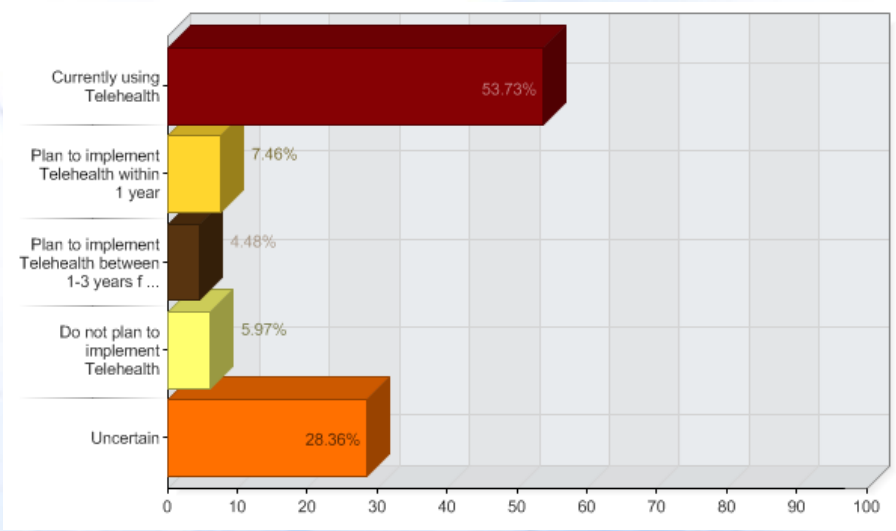
n=67

Health Information Exchange: a network characterized by the reliable and secure transmission, access, and retrieval of healthcare-related data among diverse facilities, health information organizations (HIOs) and government agencies according to national standards.

Telehealth Usage and Key Services

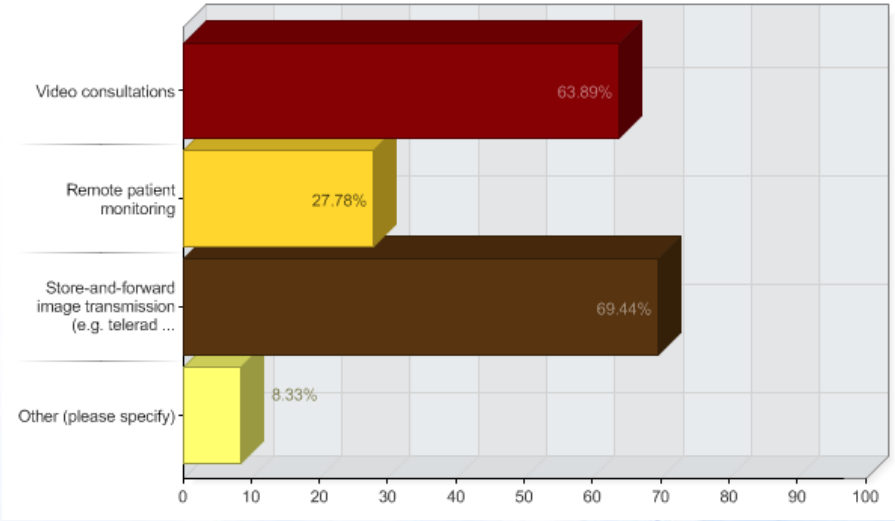
- Over half (53%) of hospitals are actively using telehealth services, essentially unchanged from a year ago
- While ‘store and forward’ remains the most commonly used mode, video teleconferencing is nearly as prevalent in hospitals

Q7. How would you characterize your location’s use of Telehealth services?



n=67

Q8. Which of the following Telehealth services do you utilize?



n=61. Note that percentages add up to more than 100% because multiple responses were allowed

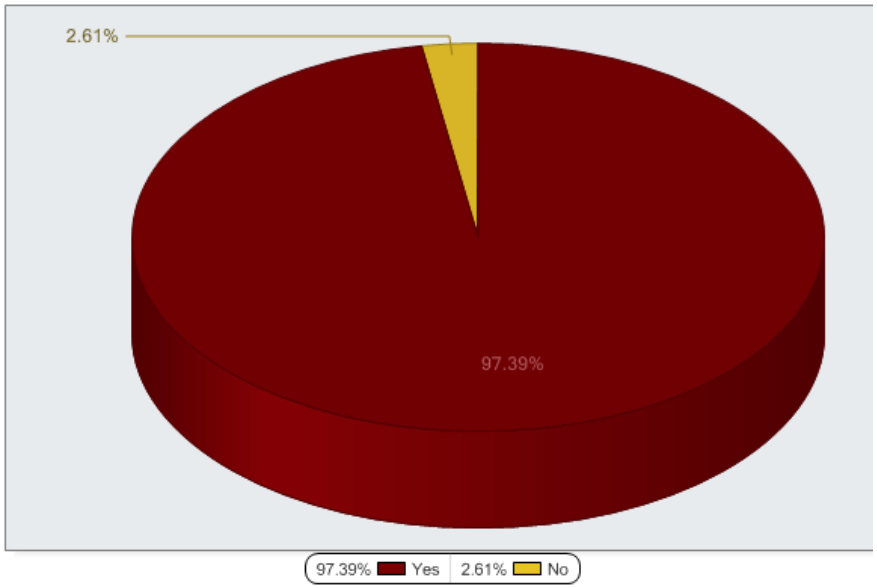
Telehealth: the use of advanced telecommunications to aid in the clinical practice of medicine, using technologies that enable video consultation, remote monitoring, and store-and-forward image transmission over fixed or mobile networks.

Detailed Provider Analysis: Physicians 2012

Broadband Usage by Type of Service

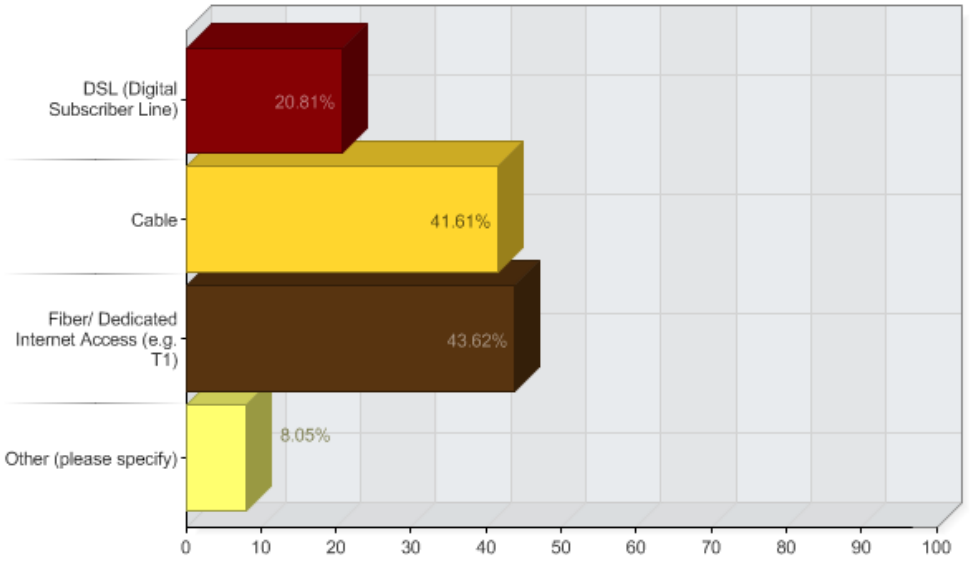
- The number of surveyed physicians using some form of broadband is now more than 95%
- The use of Cable has grown by 10% from the previous year and is now essentially even with Fiber as the most common types of broadband services

Q1. Does your healthcare location utilize broadband (i.e. high-speed) internet service?



N: 153

Q3. What type of broadband service does your healthcare location utilize: (CHECK ALL THAT APPLY)



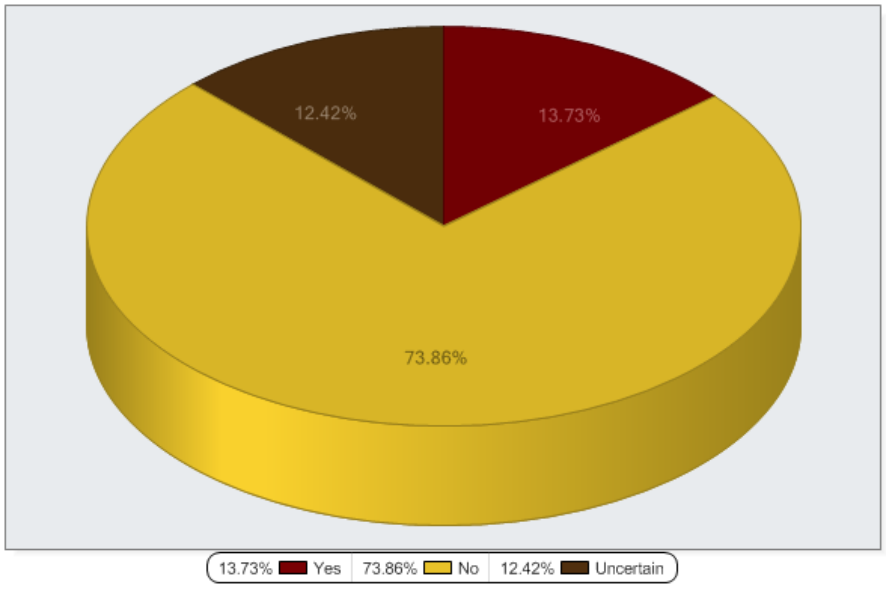
Note that percentages add up to more than 100% because multiple responses were allowed

Broadband Service: High-speed Internet access (e.g. DSL, Cable, Fiber, etc..) providing two-way data transmission with advertised speeds of at least 768 kbps downstream and 200 kbps upstream to end users. (definition per National Telecommunications Information Administration)

Broadband Provider Switch

- The majority of physicians maintained their current broadband provider, however, a meaningful percentage (13%) did make a switch this year
- It can be reasonably assumed from survey data showing a migration to fiber and cable providers that any change has been to improve speeds

Q2. Have you switched broadband providers in the last year?



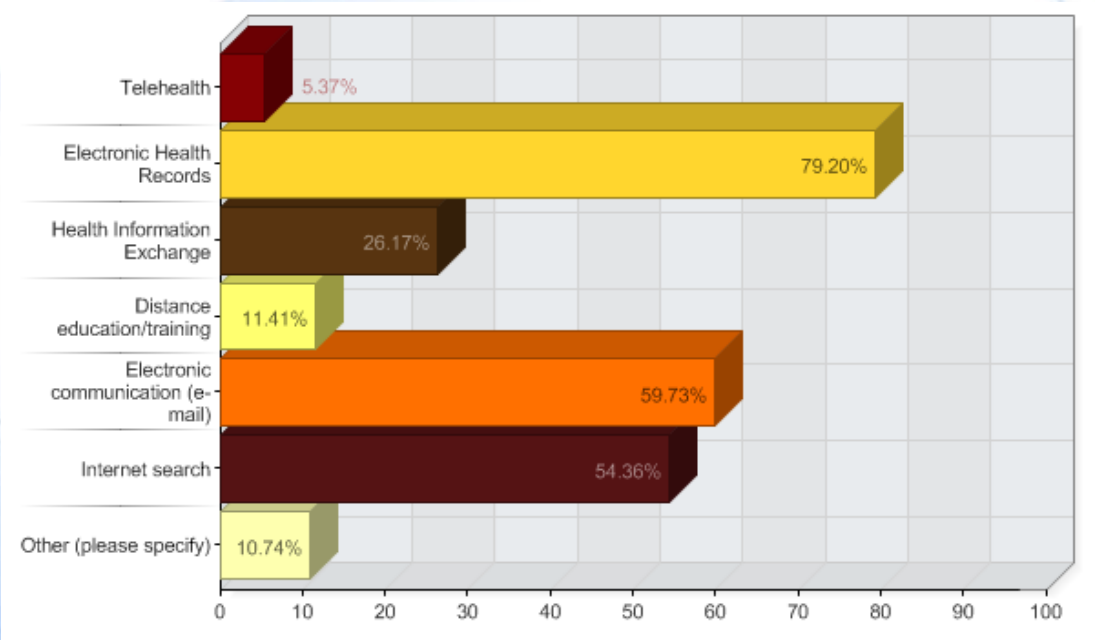
n=153.

Source: Broad Axe COV HIT Survey 2012

Importance of Broadband for Health IT

- For physicians, broadband is most important for EHR, cited by almost 80% of respondents
- Broadband connectivity, as in previous survey results, is also seen as necessary for standard work-related internet and email communications

Q6. For which of the following functions is broadband connectivity currently MOST essential?



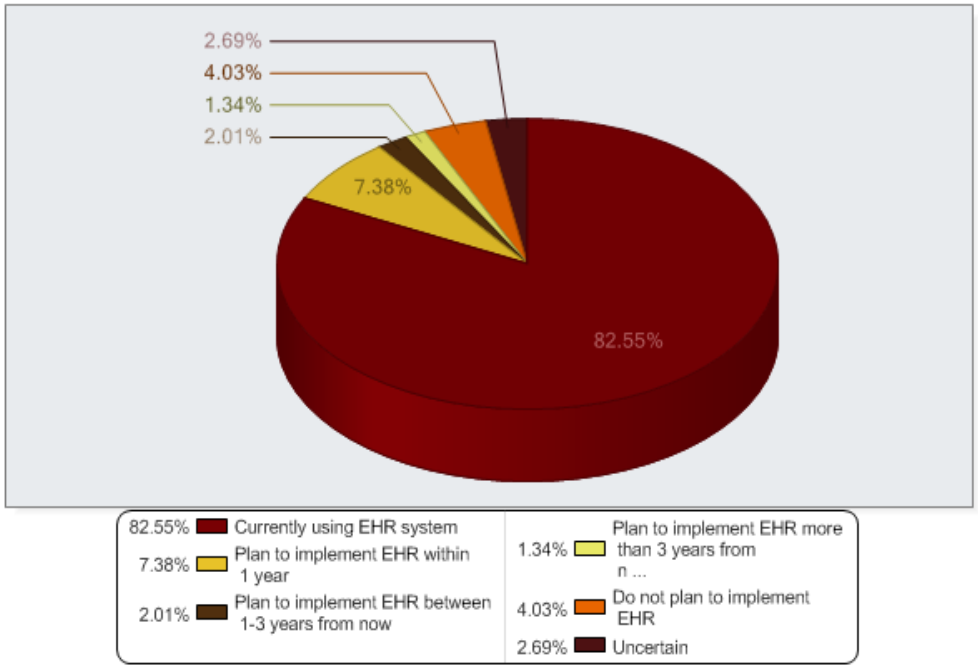
N=170; note the numbers do not sum to 100% due to more than one reply

Source: Broad Axe COV HIT Survey 2012

Electronic Health Records Utilization

- There has been an almost 13% increase from last year in the number of physicians who indicate they are currently using an EHR system
- Physician survey respondents are well ahead of published state and national averages for adoption
  - Note: (1) NCHS survey data from February 2012 may lag COV survey timeframe; (2) potential survey sample skew/misalignment

Q9. How would you characterize your use of an Electronic Health Record (EHR) system?



N=149

Electronic Health Records: digital records of patient health information generated by one or more encounters in any care delivery setting.

Note: *CDC definitions:*

'Any' EMR/EHR system - a medical or healthcare records system that is all or partially electronic (excluding systems solely for billing).

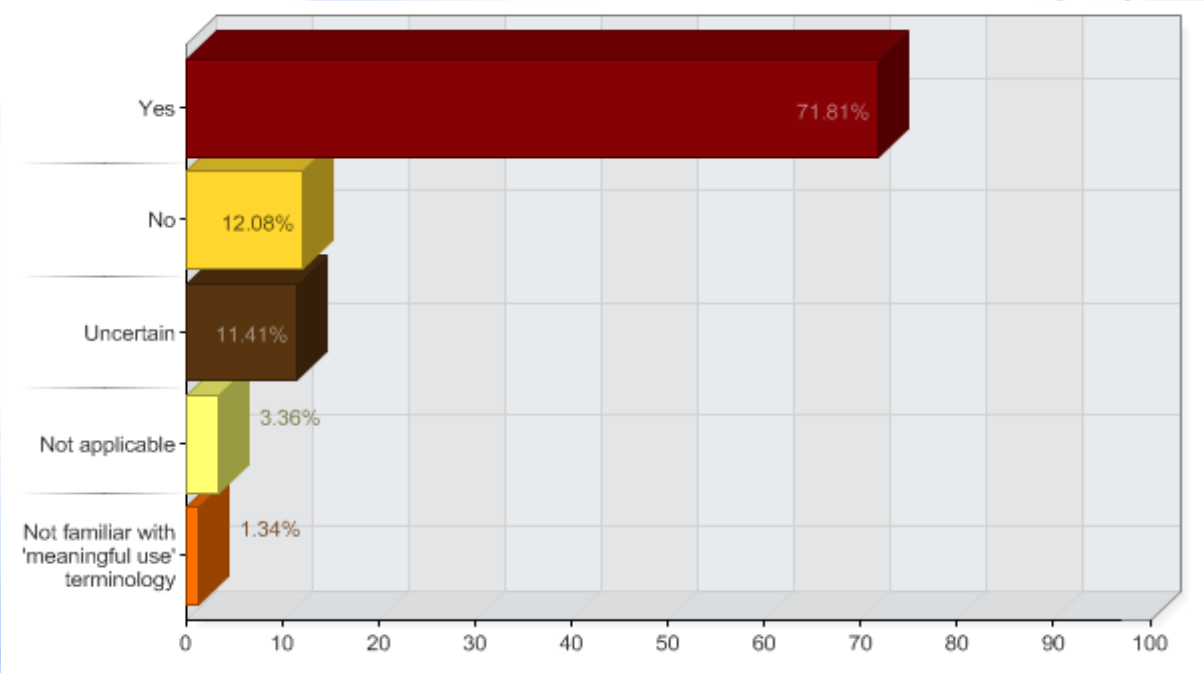
'Basic' EMR/EHR system: A system that has all of the following functionalities: patient history and demographics, patient problem lists, physician clinical notes, comprehensive list of patients' medications and allergies, computerized orders for prescriptions, and ability to view laboratory and imaging results electronically

Source: Broad Axe COV HIT Survey 2012

EHR Implementation and Meaningful Use

- In line with physicians' commitment to EHR systems, more than two-thirds of survey respondents are confident that they will meet 'meaningful use' standards going forward
- The percentage of 'meaningful use readiness' for surveyed physicians (71%) is slightly higher than the benchmark for Virginia at 64% and nationally at 66%

Q10. Do you expect to meet the Department of Health and Human Services criteria for 'meaningful use' of an EHR system in all stages?



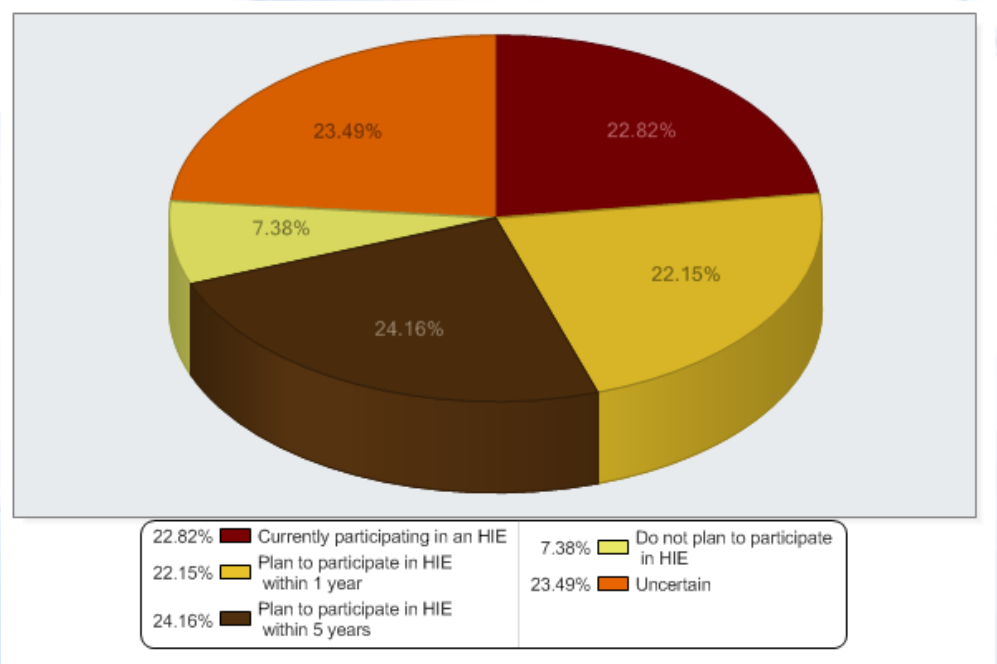
n=149

Source: Broad Axe COV HIT Survey 2012

Health Information Exchange Participation

- While the rate of HIE use among physicians has dropped slightly from last year (30%), uncertainty has fallen as well
- Moreover, almost 50% of physician respondents say they will use an HIE within 5 years, an increase from just 29% last year, indicating awareness and momentum in this area of HIT

Q11. Does your location currently participate with other healthcare providers in a Health Information Exchange (HIE)?



n=149

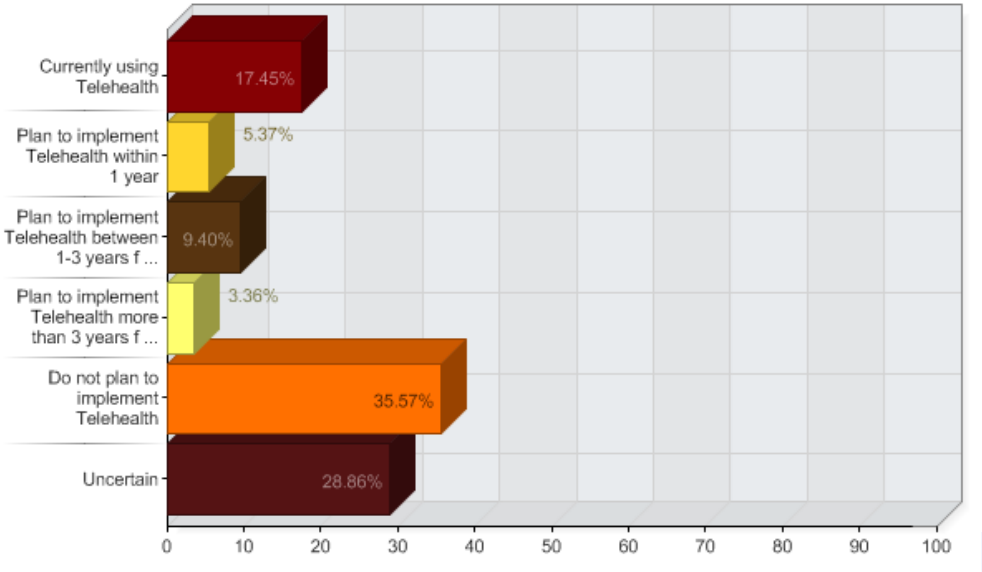
Health Information Exchange: a network characterized by the reliable and secure transmission, access, and retrieval of healthcare-related data among diverse facilities, health information organizations (HIOs) and government agencies according to national standards.

Source: Broad Axe COV HIT Survey 2012

Telehealth Usage and Key Services

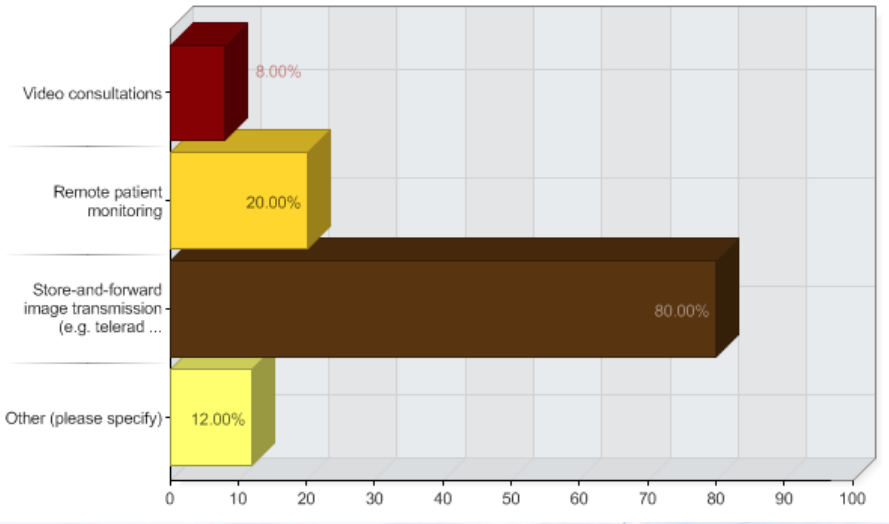
- Less than 20% of responding physicians are actively using Telehealth now, but an additional 15% indicate that they will participate within the next 3 years
- The leading telehealth service is Store-and-Forward, utilized by 80% of respondents
- 'Live' clinical telehealth solutions continue to be in early stages of awareness and use among physicians

Q7. How would you characterize your location's use of Telehealth services?



n=149

Q8. Which of the following Telehealth services do you utilize?



n=149. Note that percentages add up to more than 100% because multiple responses were allowed

Telehealth: the use of advanced telecommunications to aid in the clinical practice of medicine, using technologies that enable video consultation, remote monitoring, and store-and-forward image transmission over fixed or mobile networks.

Leading Virginia Hospital Systems: HIT and Telehealth Profiles

Major Virginia Hospital Systems

Hospital System HIT Summary Insights

- Combined, the 14 hospital systems profiled utilize thousands of acute care hospital beds
- These 14 hospital systems are an economic force in the Commonwealth employing thousands of clinicians and more than 100,000 employees
- The majority of these hospitals use Epic as their EHR platform with a few key exceptions, and most have been in various implementation stages for more than 5 years
- Many of the systems have experimented with telehealth programs targeting a wide range of conditions and patient populations, and some appear ready to implement these (often targeted) programs system-wide
- Profiled examples of hospital telehealth programs use advanced video teleconferencing and remote patient monitoring technologies to address a wide range of conditions and needs, ranging from telepsychiatry and behavioral health issues, to ICU support to chronic disease management

Provider EHR and Telehealth Synopsis

BON SECOURS HEALTH SYSTEM

Summary

- $3.3B; not-for-profit; Catholic
- 19 acute hospitals; 1 psych, 5 nursing facilities, 4 ALFs, 14 home/hospice
- 15 Virginia locations in the Hampton Roads & Richmond areas

EHR

- **System:** Epic
- **Implementation:** 2007
- **Goal:** Achieve 80% standardization across the BSHSI health system, to maximize the capability
- **Scope:** Links patient medical information, including medical history, allergies, test results and medications; patient's care team can access all treatment plans and safety alerts, ensuring continuity of care for the patient.
- **Notes:** Largest project Bon Secours has ever undertaken in terms of human capital, cultural transformation and costs; DePaul last to implement (2012)

Telehealth Program Example

- **Focus:** Readmissions
- **Type:** Remote Monitoring
- **Deployment:** Hampton Roads
- **Time in Operation:** 6 Years
- **EHR Integration:** Yes
- **Summary:** Patients with conditions likely to readmit (e.g. Congestive Heart Failure/Diabetes) get free home monitors; medical (nursing) staff monitor and provide follow-up care. Telehealth nurses set up the system, and, via virtual visits, educate patients on how to obtain vital signs (e.g. blood pressure) with data sent to a database which alerts staff of issues
- **Reported Results:** 15% drop in readmission rates to a 13% rate, 10% below the national average. Model for other Bon Secours Systems

(1) Source: AHA Data Viewer, Updated April 2012; US News & World Report Rankings 2012
(2) Source: Bon Secours Senior Health Newsletter – August-October 2011

Provider EHR and Telehealth Synopsis

Summary/Snapshot

- $1B+ Non-Profit
- 8 hospitals, 100 ambulatory care sites
  - Roanoke Memorial Hospital (and Carilion Clinic Children's) Roanoke Community Hospital
  - New River Valley Medical Center (and Carilion Clinic Saint Albans Hospital)
  - Franklin Memorial Hospital
  - Giles Community Hospital
  - Stonewall Jackson Hospital
  - Tazewell Community Hospital
  - Bedford Memorial Hospital (jointly owned with Centra)

EHR

- **System:** EpicCare EMR; replaced previous stand-alone system
- **Implementation:** Began in 2008; Completed roll-out in 2011
- **Scope:** ($68M-delete) system ties together clinical data for all hospitals and physician practices. Allows access to all patient's current and past medical history, along with test and lab results. Provides emergency/operating room, hospital and physician office with a single allergy, medication, and problem list, and automatically alerts physicians and nurses of any potential drug-drug, and drug-allergy interactions, thereby significantly increasing patient safety.
- **Notes:** Three of its Carilion's hospitals are ranked as Stage 6 in electronic medical records (EMR) adoption by HIMSS Analytics, one of about 50 hospitals nationwide to cross that threshold

Telehealth Program Example

- **Focus:** Chronic Disease Management
- **Type:** Remote Monitoring
- **Deployment:** Home Care
- **Summary:** Carilion Clinic Home Care offers a telehealth solution to patient homes in Southwest Virginia for remote monitoring of vital signs and symptoms for chronic conditions like diabetes and hypertension. The device sends data over a phone line and any abnormal signs alert our nurses, who can escalate and or initiate a home visit.

(1) Source: Summary: Carilion Website – 2009 Data
(2) Source: Telehealth: Carilion website
(3) Source: EMR – VTC Carilion web content (http://www.planittech.com/pdf/case_studies/Carilion_3520324-EN.pdf)

CIT BROADBAND CENTER FOR INNOVATIVE TECHNOLOGY

BROAD AXE TECHNOLOGY PARTNERS

Provider EHR and Telehealth Synopsis

SENTARA® HEALTHCARE

Summary

- $5B; not-for-profit; VA and NC
- 100 locations; 10 acute hospitals, (6) in Virginia
- 3 medical groups, Home/Hospice, rehab/therapy centers, Nursing and ALFs

EHR

- **System:** Epic (i.e. Sentara eCare)
- **Implementation:** Began in 2005
- **Goal:** Goal is system-wide implementation in all Virginia hospitals
- **Scope:** Links patient medical information, including medical history, allergies, test results and medications; patient's care team can access all treatment plans and safety alerts, ensuring continuity of care for the patient.
- **Notes:** Began planning in 2005 for system-wide EHR

Telehealth Program Example

- **Focus:** Virtual medical consultations
- **Type:** Video Teleconferencing
- **Deployment:** System-wide
- **Time in Operation:** 2 months
- **Summary:** Partnership (including equity stake) with FL-based MDLIVE to provide real-time medical consultations via telephone and online video with network of physicians from Sentara's medical groups and MDLIVE's network. Doctors diagnose low-acuity illnesses like allergies or urinary tract infections and provide care, including prescriptions

(1) Summary/Snapshot: AHA Data Viewer, Updated April 2012; US News & World Report Rankings 2012 and Company websites
(2) Telehealth: http://www.informationweek.com/healthcare/mobile-wireless/sentaramdlive-deal-points-to-telehealth/240005928
(3) EHR: Health Data Management Article 2010; Modern Healthcare CEO interview June 2010

Provider EHR and Telehealth Synopsis

INOVA™

Summary

- $2.25B+; not-for-profit; NoVA-based Tertiary and Teaching Hospital; NoVA's only Level 1 Trauma Center
- 7 Hospitals; 35 total locations; 1,700 beds
- Ranked #1 in Metro DC by US News and World Report – July 2012

EHR

- **System:** Epic (EpicCare); replaced early GE Centricity version/implementation
- **Implementation:** 14 Ambulatory sites live as of April 2, 2012; launch at Inova Fairfax 11/2012, Fair Oaks and Loudoun 3/2013 Mount Vernon and Alexandria 6/2013. (Source: Inova Epiccare webpages)
- **Goal:** Standardization and integration across the whole health system
- **Scope:** All billing, scheduling, registration, patient, clinical, practice management at all locations for all clinicians

Telehealth Program Example

- **Focus:** Telemedicine (Tele-ICU); Telehealth Program – 2 pilots)
- **Type:** Video Teleconferencing; Mhealth
- **Deployment: Tele-ICU -** System-wide w/plans to productize;
- **Time in Operation:** Tele-ICU – 7 years; Telehealth pilots -1+ year
- **EHR Integration:** Tele-ICU – yes
- **Summary:** Tele-ICU provides direct clinical care to patients regardless of location, using a teleconference solution - "eICU" by Visicu Inc. From a support center in Falls Church, intensive-care specialists monitor patients in facilities in Leesburg, Alexandria, etc.. overseeing 129 beds, treating patients remotely (8,852 in 2009). Inova plans to sell service to unaffiliated systems in 2012 and expand to other specialties like stroke response, home care services, psychiatry. Tele-stroke program: Staff neurologists use enabled laptops that allow access to picture archives, labs, and real-time audio-visual conferencing with other providers and patients. Doctors can be reached at home/any facility. Inova's home health program will give100 nurses laptops with real-time wireless audio-visual connectivity used from patient homes.

(1) Summary: AHA Data Viewer, Updated April 2012; US News Rankings 2012 and Company website
(2) Telehealth: Sources: http://www.inova.org/healthcare-services/inova-telemedicine-program preparing to sell the service to unaffiliated hospitals throughout Virginia; ww.bizjournals.com/Washington/print-edition/2010/07/Inova-marketing-electronic-icu.html; fiercemobilehealth.com

Provider EHR and Telehealth Synopsis

Wellmont Health System

Summary

- $1B, Non-Profit formed in 1996 via merger of Bristol Regional and Holston Valley Medical Centers; operated partner of Adventist Health System
- 7 Acute Care hospitals and 1 critical access in VA/TN "Tri-Cities" region
- 3 Hospitals in VA:
- Mountain View Regional, Norton, VA
- Lee Regional, Pennington Gap, VA
- Lonesome Pine Hospital, Big Stone Gap, VA

EHR

- **System:** Epic
- **Implementation:** Upgrade announced 09/12
- **Scope:** Upgrade to EMR includes billing/claims revenue system; goal is link with other Epic providers across the country and mobile device access
- **Note: Program implementation on new EMR to begin** January, 2013 based on a best-practice model by Epic. System-wide "go-live" planned during 2014 – all hospitals and doctors to be included.

Telehealth Program Example

- **Focus:** 1) Rural Cardiac/Stroke Care 2) Chronic Disease
- **Type:** VTC
- **Deployment:** Southeast Virginia
- **Time in Operation:** Implemented in 2009
- **Summary:** Wellmont Cardio-Stroke TeleHealth Network formed with support from the Tobacco Commission Lee Regional Medical Center. LRMC doctors electronically transmit patient test results to workstations at Holston Valley Medical Center for consultation by cardiologists via VTC. Second program: USDA grant for telemedicine and distance learning (Part of USDA's Rural Development funds for telemedicine (2011). Focus on chronic disease management in rural communities; links doctors and patients LRMC, Lonesome Pine Hospital in Big Stone Gap, VA and Mountain View Regional with doctors at Bristol Regional Hospital (TN); Wellmont MOU with UVA to access UVA telemedicine as needed.

(1) Summary/Snapshot: 2011 June Financial Report, Wellmont website; AHA data; US News Rankings 2012
(2) Telehealth: Wellmont Website and press announcements, October2009, 2011
(3) EMR: Wellmont Website and EMRIndustry blog, November 8, 2012

CIT BROADBAND CENTER FOR INNOVATIVE TECHNOLOGY

BROAD AXE TECHNOLOGY PARTNERS

Provider EHR and Telehealth Synopsis

RIVERSIDE
The Leader in Lifelong Health

Summary

- Non-profit
- Beds: 904
- Five-hospital health network based in Newport News and Southwestern Virginia
- Includes a network of hospitals, physicians groups, school based clinics, home care, retirement, cancer treatment and telemedicine facilities
- (3) hospitals in rural Tappahannock, Eastern Shore and Gloucester as well as a regional medical center in Newport News
- Employees: 7000

EHR

- **System:** GE Centricity EMRs
- **Implementation:** Began using Centricity in 1995/6 prior to GE's purchase of the system
- **Notes**: Separate ER records for emergency room and PACS systems brought together via 'Riverside Record Link.' with a single sign on with clickable tabs to go from one to the other.

Telehealth Program Example

- **Focus:** Stroke Care
- **Type:** VTC, robotics
- **Deployment:** 2010/11
- **EHR Integration:** Yes
- **Summary:** Staff neurosurgeons collaborate with physicians at Riverside Tappahannock Hospital to provide a "telestroke" program in Hampton Roads and Northern Neck, via patient bedside teleconferencing unit to examine patients remotely and offer treatment recommendations. In 2012, Riverside began using a robotics tool in association with stroke experts at Rush University Medical Center. The telemedicine robot allows neurologists at Rush to control a camera to pan and zoom to view a patient's pupils and other vital signs, read CT scans, and talk to patient, family and medical staff. System has access to EMRs. Neurologist can log on from laptops from anywhere to assist.

(1) Summary/Snapshot: Riverside Website ;AHAData.com
(2) Telehealth: Riverside website; July 2012 press statement re: robotics initiative
(3) EMR: Health System CIO podcast of Riverside CIO interview

CIT BROADBAND CENTER FOR INNOVATIVE TECHNOLOGY

BROAD AXE TECHNOLOGY PARTNERS

Provider EHR and Telehealth Synopsis

CENTRA

Summary

- Non-Profit $907M
- 3 Hospitals: Lynchburg General Hospital, Virginia Baptist Hospital and Southside Community Hospital; also rehabilitation centers, a regional cancer center and physician practices serving Bedford/Farmville, Nelson County and Danville, VA
- Beds:508Personnel: 6,000
- Medical staff: 490

EHR

- **System:** McKesson Horizon Clinicals and Star Financials/Allscripts for staff physicians and Emergency Department
- **Implementation:** Began in 2004
- **Scope:** System-wide; all clinical and financial functions
- **Notes**: In 2010, Centra selected and now subsidize the implementation of Allscripts EMR for staff physicians and Allscripts Community Exchange to connect regional practices with its hospitals with a roll-out to 250 providers with the aim of helping practitioners meet meaningful use requirements

Telehealth Program Example

- **Summary:** Information on telehealth plans scarce.

(1) Summary/Snapshot: Centra Website; AHAData.com; US News Rankings 2012; VHI.org
(2) Telehealth: Business Journal coverage of Centra press release, Feb. 2011
(3) EMR: CIO Interview Centra – Healthsystemcio.com , 10/2011 - PrNewswire article July 2010, McKesson Datasheet; Centra Website

CIT BROADBAND CENTER FOR INNOVATIVE TECHNOLOGY

BROAD AXE TECHNOLOGY PARTNERS

Provider EHR and Telehealth Synopsis

HCA
Hospital Corporation of America℠

Summary

- HCA Inc. $8B; Public; 163 Hospitals/110 surgery centers in 20 states
- HCA Virginia: 13 Acute care hospitals; 13 outpatient clinics; 13,000 Personnel
- Locations: Henrico Doctors' Hospital, John Randolph Medical Center, Portsmouth Regional Hospital, Parkland Medical Center, Frankfort Regional Medical Center, Dominion Hospital, Reston Hospital Center, Spotsylvania Regional Medical Center, Stone Spring Medical Center, Lewis Gale Medical Center, Lewis Gale Hospital Alleghany, Montgomery and Pulaski

EHR

- **System:** MEDITECH EMRs
- **Implementation:** Began in 2006; first implementation 2009; others pending 2012, 2015
- **Notes**: Current EHR replaces Cerner implementation from 1990s. First MEDITECH 6.0 implementation begun in 2010. Reported one-site pilot of Epic currently ongoing; HCA launched CureMed HIE enabling physicians associated with HCA to exchange clinical and medical management information.

Telehealth Program Example

- **Focus:** Telestroke
- **Deployment:** 2009
- **Summary:** The HCA Research Medical Center in Kansas City launched a Tele-Stroke Program using real-time VTC2 with 24-hour on-call neurologist for evaluation and treatment of stroke patients

(1) Summary/Snapshot: HCA Virginia Website, HCA Inc. Website; AHAData.com; US News Rankings 2012
(2) Telehealth: HCA Virginia Website; HCA Research Medical Center press statement, Feb 2011
(3) EMR: Meditalk.com, October 2012; HCA hCare employee blog

CIT BROADBAND CENTER FOR INNOVATIVE TECHNOLOGY

BROAD AXE TECHNOLOGY PARTNERS

Provider EHR and Telehealth Synopsis

VCU Medical Center
Virginia Commonwealth University
Every Day, A New Discovery.®

Summary

- $1.7B
- Non-profit, University-based Teaching Hospital
- Licensed Beds: 865
- ER Visits: 84,291
- Admissions: 31,523
- Total Surgeries: 20,114
- Employees: 6,622

EHR

- **System:** Cerner
- **Implementation:** Began implementation in 2004; roadmap for complete EMR implementation in 2013
- **Notes**: in October 2009, launched plan with Cerner to implement an integrated EHR system covering more than 60 ambulatory clinics, Affiliated physicians have had access to EHRs via mobile phones since 2009

Telehealth Program Example

- **Focus:** Numerous specialty and subspecialty areas
- **Type:** VTC, RM, mobile telemedicine units
- **Deployment:** Early adopter and provider (Earliest program dates to late 90s
- **EHR Integration:** Yes
- **Summary:** VCU offers clinical telemedicine for an extensive range of conditions, including Cardiology, Cardiothoracic surgery, Endocrinology, Genetics, ICU/Pulmonary, Infectious diseases, Neonatal, Neurology, Neurosurgery, Oncology, Oral surgery, Orthopedic surgery, Psychiatry, Rheumatology, Urology and have alliances with Virginia Department of Corrections, Community Memorial Health Center, Centra Health System, Danville Regional Medical Center, Southern Virginia Regional Medical Center, Riverside Health System, Valley Health System in Winchester, Va.

(1) Summary/Snapshot: VCU Annual Report 2011; VHI.org
(2) Telehealth: VCU Telemedicine website
(3) EMR: 2009 VAHIMSS VCU Conference Presentation

CIT BROADBAND CENTER FOR INNOVATIVE TECHNOLOGY

BROAD AXE TECHNOLOGY PARTNERS

Provider EHR and Telehealth Synopsis

UNIVERSITY of VIRGINIA HEALTH SYSTEM

Summary/Snapshot

- $1B+, State-Affiliated, Not for Profit Academic Medical Center
- Total Beds: **577**
- Admissions: **28,575**
- Inpatient Surgeries: **14,584**
- Emergency Visits: **60,756**
- Personnel: **6,114**

EHR

- **System:** Epic
- **Implementation:** Begun in 2009
- **Goal:** Standardization and integration across the whole health system

Telehealth Program Example

- **Focus:** Telemedicine and telepsychiatry
- **Type:** VTC primarily, with selected RM initiatives
- **Deployment:** Links health professionals remotely throughout the state through partnerships with healthcare facilities, physician practices, etc. and a network of over 25 locations, including Riverside Hospital, Valley Health and Bath Community Hospital
- **Time in Operation:** 1994
- **Summary:** Under Dr. Karen Rheuban, Medical Director of UVA Office of Telemedicine, UVA became pioneers in telehealth with a range of programs serving rural, prison, and urban populations in many clinical applications via public/private partnerships. (e.g. UVA/Verizon enable VTC/RM to rural clinics in Wise county and have set up a Remote Area Medical (RAM) Clinic for patients to receive medical and dental services, screenings and educational services, supported by telemedicine/access to EMR during visits. In 2011, UVA helped to create Mid Atlantic Tele-Resource Center (MATRC) with support of HRSA grant.

(1) Summary/Snapshot:, UVA website; Virginia Health Information (VHI), AHA Data 2012; US News Rankings 2012
(2) Telehealth: Various sources.
(3) EMR FierceEMR http://www.fierceemr.com/story/university-virginia-ge-settle-47-million-suit-over-emr-implementation/2012-07-13#ixzz2EhU1f5s3

Provider EHR and Telehealth Synopsis

LIFEPOINT HOSPITALS®

Summary/Snapshot

- $3.5B, Public
- 54 hospital campuses in 18 states
- Personnel: **24,000**
- Physician Partners: **3,000**
- Admissions: **195,974**
- Inpatient Surgeries: **53,017**
- Emergency Visits: **1,024,273**
- Virginia Revenues: **$369M** (2011)
- Hospitals in VA: **4**
  - Clinch Valley Medical Center
  - Danville Regional Medical Center
  - Memorial Hospital of Martinsville
  - Wythe County Community Hospital

EHR

- **System:** eClinicalWorks EMRs and Practice Management systems
- **Implementation:** 2009-2011

Telehealth Program Example

- **Summary:** LifePoint now exploring the use of telehealth in psychiatric care

(1) Summary/Snapshot: 2011 Annual Report
(2) Telehealth: Web Search
(3) EMR: LifePoint Quarterly Newsletter – Fall 2011

CIT BROADBAND CENTER FOR INNOVATIVE TECHNOLOGY

BROAD AXE TECHNOLOGY PARTNERS

Meaningful Use Stage 2 Summary

- To become eligible for Medicare and Medicaid (CMS) incentive payments, eligible physicians/other providers (EPs) and hospitals must demonstrate that they have implemented an electronic health records system (EHR) and can meet a wide range of "meaningful" functions/requirements. (Meaningful criteria, in this case, are developed by CMS)
- Eligibility further requires that these functions be carried out in prescribed stages and within certain timeframes
- The first stage of Meaningful Use required providers to participate in the incentive program for two years and demonstrate their ability to meet a broad set of initial criteria before progressing to the next stage criteria
- The delayed publication of the second stage of Meaningful Use includes more detailed functional standards and performance requirements. These are described in in a 672-page document (Meaningful Use Stage 2 Final Rule)
- Stage 2 is summarized on the following page

Source: CMS website; Informationweek: MU Stage 2: Are you Ready? September 24, 2012

Meaningful Use Stage 2 Summary

The Meaningful Use 2012 Final Rule, published in late summer, includes changes that add uncertainty to providers' views of their Meaningful Use "readiness":

- Timeline for Stage 2 transition delayed
  - One-year extension of the deadline to meet Meaningful Use Stage 1 criteria and progress to Stage 2 (i.e. the earliest that Stage 2 criteria will be effective is now 2014 – for those providers who first demonstrated MU in 2011 – rather than 2013)
- Expanded core objective and Clinical Quality Measure requirements
- Increased performance thresholds in a number of usage and delivery areas, for example:
  - More than 50% of prescriptions must now be completed through electronic prescribing, up from the stage 1 threshold of 40%.
  - Capture of demographic information, vital signs, and smoking status is now at 80% in stage 2
  - The number of clinical decision support and intervention "instances" (e.g. reporting drug contraindications and drug allergy alerts) required to be reported in a given timeframe has been raised from 1 to 5
- Increased facilitation of patient access to records and communication:
  - Stage 2 facilitates patients' online access to their records within 3-4 days of an encounter vs. Stage 1, which required EPs to provide patients with electronic copies of health information or discharge instructions
  - EPs now, on limited basis, to use secure electronic messaging to communicate with patients
- New requirements for exchange of information between providers (e.g. improved summary of care records) to improve care coordination and transitions of care

Source: CMS Stage 2 Overview Tipsheet, August, 2012
Source: Informationweek: MU Stage 2: Are you Ready? September 24, 2012

455 Second St SE
Charlottesville, VA 22902

Kirby Farrell
kfarrell@broadaxepartners.com
434-987-0092

Andy Archer
aarcher@broadaxepartners.com
434-981-2636

Mike Sullivan
msullivan@broadaxepartners.com
703-929-5172